



**REPORT OF CLATSOP COUNTY
LONG-RANGE PLANNING CONFERENCE
1968**



COOPERATIVE EXTENSION SERVICE

OREGON STATE UNIVERSITY

CORVALLIS, OREGON 97331

March 10, 1969

TO: Oregon State University Library

FROM:

Jean W. Scheel
Jean W. Scheel
Assistant Director

SUBJECT: Clatsop County Long-Range Program Planning Report

Attached for your information and future reference is a copy of the Clatsop County Long-Range Planning Conference Report for 1968. This is another in the series of these reports that are being developed for all counties in Oregon.

These county long-range planning conferences are an activity in which substantial numbers of local citizens are involved in various community studies with the assistance of staff members and information from the Cooperative Extension Service and many local, State and Federal agencies. The problems identified and the recommendations set forth in these reports become the basis for attention in subsequent program activity by many different groups, both public and private.

Experience with this process in this state since it was first undertaken in the mid-1920's shows that it has played a significant role in the development of our State. The present series will perhaps be more significant than any of its predecessors, both because of the new breadth of the considerations that have been undertaken and because of the extent of factual data that has been considered by the committees.

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REPORT OF CLATSOP COUNTY LONG-RANGE PLANNING CONFERENCE 1968

Acknowledgments:

The Clatsop County staff of the Oregon State University Extension Service gratefully acknowledges the assistance of committees and resource people in the preparation of this report. The forest ownership map from the Oregon State Forestry Department; art work by John Richards; color photos by Ned Thorndike; the Fort Clatsop cover photo from the National Park Service are all greatly appreciated.

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Chairman	Home Economics
Agriculture	(Resigned June, 1967)
Robert Marsh	(Mrs.) Dorris Roy
4-H Club Work	Home Economics

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The Board of County Commissioners commend the citizens of Clatsop County serving on the committees for the 1967 Program Planning and Outlook Conference. Their contributions of time, energy and thought have made possible the excellent committee reports published here.

Committee recommendations of this fifth County Planning Conference sponsored by the Oregon State University Cooperative Extension Service will provide a useful reference of community resources and development efforts during the next decade.

Interest of committee members extended to many resources of our County. Committees dealt with forestry, land and water resources including fishing and recreation industries, money and credit, youth, family life, horticulture, mink, livestock and dairy. Enterprises that may better utilize our agricultural lands were also considered in the committee member's broad look at the Clatsop economy.

The County Board of Commissioners depend on many lay committees and the involvement of citizens to bring about the sound, steady growth of Clatsop County. The services and acceptance of responsibility toward community improvement shown by the Planning and Outlook Conference Committee people is greatly appreciated. In this service they have also increased their knowledge and leadership ability and strengthened the county's most important resource - - - its people.


Hiram Johnson
Chairman of the Board of County Commissioners


Verne Stratton
County Commissioner


Lyle Ordway
County Commissioner

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FOREWORD

Planning for the future in Clatsop County has been a rewarding experience, particularly to the 150 people serving on the County Extension Advisory Council and committees of 1967-1968 Program Planning and Outlook Conference.

In cooperation with the Clatsop County Extension agents and the Oregon State University Extension Service, these people have considered resources, identified problems and opportunities, and have made recommendations for some long-range steps toward improvement of Clatsop County as a place to live, work, and enjoy life.

The conference committees were formed to explore matters of concern and the changes coming from population growth, industrialization, social attitudes, and rural-urban relationships.

Committees included: Land and Water Resources,

Money and Credit, Forestry, Family Life, Youth, Livestock, Mink, Dairy, and Horticulture.

This booklet presents a cross-sectional look at some aspects of Clatsop County, with suggestions or recommendations for improvement that will, it is hoped, become action projects for many of the committees and organizations dedicated to the planning and development necessary to the orderly and maximum use of resources, including the resources of our people.

This planning conference and this bulletin are part of a series that has been assisted and encouraged by the OSU Extension Service at about ten-year intervals since the establishment of the County Extension Office in 1916. The long-range planning and outlook conferences have helped establish much of the operational philosophy and program direction for the Cooperative Extension Service.

GENERAL CHARACTERISTICS AND FACILITIES

Early History

The Astor Fur Company of New York sent men to establish a fur-trading center at the mouth of the Columbia. They arrived March 24, 1811, crossed the bar with difficulty, and anchored in Baker's Bay. On January 18, 1812, the group arriving by sea was joined by the additional fur-company group arriving by land.

Some livestock and a variety of vegetable seeds had been brought with the Tonquin cargo. Seeds were planted in May. The garden looked good in August, but except for radishes, turnips, and potatoes crops failed to mature.

Astor party members and author, Gabriel Franchere, reported that the turnips were huge: "One of the largest that we had the curiosity to measure was 33 inches around and weighed fifteen and one-half pounds. They were still in blossom at the end of December and we left them in the ground. But the seed were all destroyed by the mice that infested the garden and lived under the stumps we had not uprooted. From the dozen potatoes that we had been able to keep sound, we grew 90 plants. These were kept carefully in order to use them as seed the following spring. But our pains were unavailing, for during the second year the ground was colder than the first and all came to finally nothing."

In general, they found this soil about the fort unsatisfactory for good cultivation; at least the vegetation was slow and late in maturing. However, they did find wild fruit such as "white" strawberries, salmonberries, blueberries, huckleberries, cranberries, wild pear, crabapple, and a variety of roots. Salmon, deer, and elk made up a large part of their meat diet. Franchere also mentioned sturgeon as a seasonal fish and reported that one weighed 390 pounds even after being drawn.

This first United States white settlement west of the Mississippi at the present site of Astoria was abandoned in 1813 and moved inland to the more productive lands of the Willamette region.

By 1839 west-bound settlers again took up residence and development of the lower Columbia area. By 1850 the business of ocean and river traffic was causing development of mills for lumber, livestock imports for dairy

and beef farms, and fishing industry exports. Interest in land development and a steady influx of people by sea and land was under way.

The Seaside house of the overland freight developer, Ben Holladay, built near the Cove in the late 1800's marked the beginning of Seaside as a resort area. River boats from Portland and the beach train from Skipanon to Seaside are still remembered by many, and mementos fill the interesting museums of the county. Hundreds of people were arriving from and departing from San Francisco aboard the steamers of the early 1900's that docked at Flavel near Hammond in the exciting days when Warrenton boasted more area than the city of New York.

Fort Stevens, a United States artillery installation on the south side of the Columbia entrance, waxed and waned from the late 1800's to the 1950's and brought many new residents to Clatsop, first as soldiers. As a questionable distinction, this fort was fired on by Japan during 1942 and was a main nerve center for coastal defenses.

The early to mid-1900's also saw Clatsop shift from the number-one county in volume of harvested timber, when steam engines and skidways moved giant firs down to several large mills along the Columbia, to a time when thousands of logged-off and burned forest acres, along with national recession, caused land to be deeded to the county in wholesale, worthless blocks. Out of this came large ownerships by private timber concerns and a special arrangement with the Oregon State Forestry Department for ownership and management of some 150,000 acres of county land.

Today forest management is directed to perpetual yields of pulpwood, poles, second-growth sawlogs, and hardwoods. A pulp mill has replaced old, inefficient sawmills in the Wauna area, and Columbia River frontage suitable to further industrial growth is of prime importance.

Agricultural history covers early homestead farms along the open coastal strip; development of diking systems for bottom lands cleared of large spruce to bring acreages under cultivation for truck farms, dairy, forage, and general livestock and poultry production. Early markets of

the large logging camps, summer beach trade, and even Portland via the river boats and SP&S railroad supported agriculture and a maximum of some 20,000 acres of tillable lands. Clatsop farmers have found farms most suited to forage production for dairy and beef, with some specialties such as cranberries, Astoria bentgrass lawn seed, and holly.

The John Jacob Astor Branch Experiment Station of Oregon State University started in about 1915. The experiment station staff developed over the years one of the world's leading Guernsey herds and has led in determining forage and livestock production practices for coastal as well as inland producers.

The Oregon State University Extension Service started in 1916 in cooperation with Clatsop County, has worked closely through the years with initiatory promotion of land and water development, farm organizations, commodity committees, land use, and recreation as well as youth and homemaker programs under 4-H and home economics.

Much of the cultural and marine history of the area is well presented for the visitor at the Lewis and Clark National Park Memorial on the site of the 1805-06 winter quarters for this famous party and at the county historical society's Flavel Museum and the Maritime Museum, which are both in Astoria.

Land and Water

Clatsop County varies in topography from the coastal land strip along the Pacific shore to the rugged, mostly forested summits of coastal range peaks such as Sugar Loaf (2,858 feet) and Onion Peak (3,064 feet) to the south; Saddle Mountain (3,283 feet) near the center of the county; and Wickiup (2,464 feet) and Nicolai (2,651 feet) peaks to the north overlooking the Columbia River lowlands.

Water boundaries are formed by the Pacific on the west, the Columbia River to the north, and the Nehalem River along much of the south and east lines of the county.

Timber provides the major natural resource, covering some 473,000 acres of the total 515,000 acres of Clatsop County. Seafoods harvested commercially from the Pacific Ocean and Columbia River provide another major natural resource to the county.

Agricultural lands are included as well as woodlands in the 39,501 acres of farm ownership found mainly in the lowland areas along the coastal strip, and the Columbia, Nehalem, Youngs, Lewis and Clark, Necanicum, and Big Creek rivers. The 15,000 acres of tillable cropland for the most part are on the flood plains which have been developed and protected over the years by dikes, floodgates, and internal drainage ways.

The natural beauty and waters of the county provide another resource through federal, state, and county parks and recreational facilities that attract many tourists and visitors. Fort Stevens State Park in 1966 reported 650,000 visitors, and demands on park capacities continue to grow.

Population

Clatsop people add still another major resource in their abilities to shape and direct the resource utilization, livability, and growth of Clatsop.

A population of nearly 28,000 people in Clatsop

represents 34 persons per square mile compared to 20 for Oregon. Over 55 per cent of the population lives in the urban centers, with a drop in rural population from 1950 to 1960 of nearly 16 per cent. The 30,776 people recorded in the 1950 census were the highest number in Clatsop's history. It then dropped about 14 per cent until 1963 and has since increased. Some 7,500 families are living in Clatsop; 3,400 of them are rural.

Astoria, with a 1966 population of nearly 12,000, had at one time in 1920 been at 14,000. Shifts in the lumbering business, seafood industries, and defense work of wartime caused the major drop in population. Seaside has 4,000 people and Warrenton has 1,800. Other incorporated towns include Gearhart, 730; Cannon Beach, 520; Hammond, 563. All of the towns listed are influenced by summer residents; the figures given are for the year-round residents. Seaside has the most summer influx, reporting a summer population of nearly 12,000. Estimates of 50,000 people being in the beach communities during the July 4th and Labor Day weekends are reported.

Clatsop residents in 1964 were estimated to have a total net buying income of nearly \$50 million. The average per household was \$5,729. In 1965 there were 6,881 covered employees.

The majority of Clatsop people work in the ten largest employment categories of food processing; forestry and wood products; medical and professional services; retail and wholesale trades; construction; motels, hotels, recreation, and other services; transportation; finance, insurance, and real estate; government and agriculture.

Property improvements and land values totaled assessed valuation of \$40 million in 1966.

New industrial growth such as the Crown Zellerbach pulp mill at Wauna and the prospects for an aluminum plant at Warrenton, expanded port activities, and occupation of the United States government's Tongue Point facilities by the Job Corps are factors in the increasing population. The Knappa area along Highway 30 has had sudden growth due to the Wauna paper mill of Crown Zellerbach Corporation. The coastal strip under building pressures from the tourist trade and summer home owners has also shown population increases.

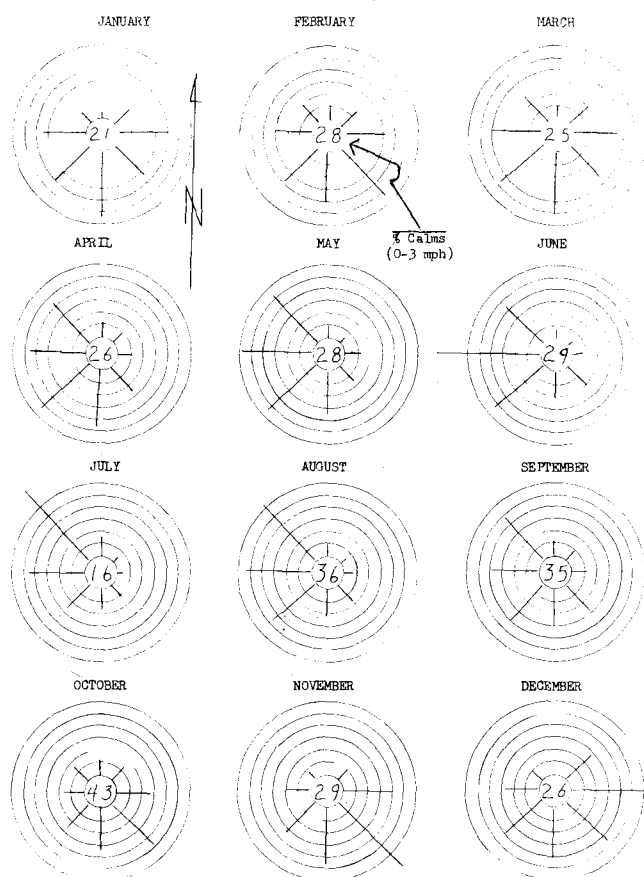
Climate

Climatic features are significant in that the average summer temperature of 60.6° provides a welcome change for inland visitors as do the often stormy but mild winter days averaging 40.7°. Seaside residents enjoy slightly higher average temperatures and slightly less rainfall than Astoria. The Nehalem Valley is also generally warmer in the summer.

Rainfall of 80.44 inches sheds mainly from October through March, with nearly half of this falling in November, December, and January. Site I and II timberland, grass and clover forages, abundant wildlife, and the greenery and freshness admired by many all benefit from the rainfall.

Wind directions have been particularly significant to the industrial firms becoming established. Predominant summer winds are from the northwest and winter winds from the southwest. The winds of less than 3 miles per hour come primarily out of the southeast.

MONTHLY WIND ROSES FOR ASTORIA

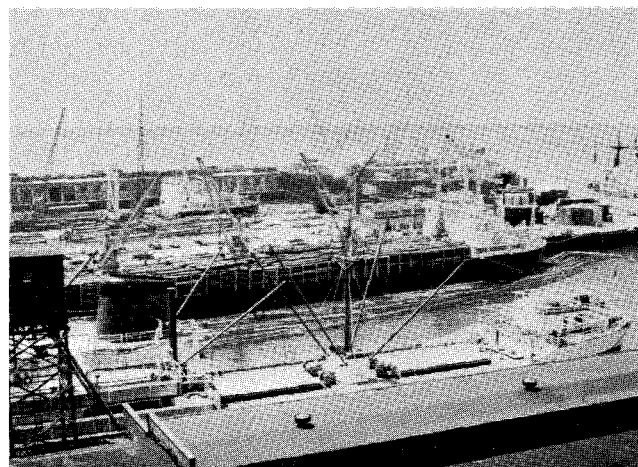


Scale 1/8 inch = 1/8 frequency of occurrence

Transportation

The most recent development in highway transportation was completion of the trans-Columbia bridge in July, 1965. Total vehicular traffic in 1967 amounted to 418,783 as compared to the last year of ferry traffic totaling about 85,934 vehicles. The trans-Columbia bridge completes the United States nonferry highway from Mexico to Alaska.

U. S. Highway 30, leading inland along the Columbia River to Portland, is under rapid improvement and is vital to the movement of goods in and out of Clatsop. U. S. Highway 26, which also extends the thirty-mile width of the county and east to Portland, is as important as Highway 30 in the movement of goods and people. Improvement of this highway is urgent for the free movement of trucks and minimum freighting costs. U. S. Highway 101, serving the entire scenic Pacific Coast, brings thousands of tourists to and through Clatsop. Some 20 miles of Clatsop ocean beaches are public state highways and easily accessible from Highway 101. State Highway 202 leads inland from Astoria to Jewell, Mist, and Vernonia and to Highway 26. It serves the inland points of the county, the Nehalem valley, and serves as an alternate route to Portland. Rail transportation for freight is provided along the Columbia River to Astoria and on to Seaside by the Seattle, Portland and Spokane Railroad. The Port of Astoria ocean freight traffic in export and import products as well as Columbia River barge traffic has expanded rapidly to become a major factor in the Clatsop economy.



Logs, Studs, and Grain Being Loaded for Export at Clatsop's Port Docks

In addition to the impressive new 4.2 mile-long bridge over the Columbia River, there is the approach to Astoria from Seaside over the fairly new Youngs Bay Bridge that provides the county residents as well as tourists with a beautiful view of historic Astoria and the peninsula where the Astor fur party first made fort in 1811.

Airline service at the Clatsop airport is provided regularly by the Air West Airlines and by private flight service. Many private business and pleasure planes also use this airport and the one at Seaside.

Greyhound bus service provides a means of reaching Portland via the Columbia River or Seaside.

Libraries-Communication Media

Public libraries are located at Astoria, Seaside, and Warrenton, with the state library service being available also to Clatsop communities.

Newspaper service is provided by the *Daily Astorian* and by the weekly *Seaside Signal* and *Columbia Press*.

Radio stations KAST and KVAS are both located in Astoria, and radio station KSWB is located in Seaside to serve the lower Columbia area. TV cable service, having originated in Astoria, continues to serve Portland and Seattle channels. An increasing number of families and businesses are taking advantage of the FM radio station broadcasts reaching the area from Portland, Seattle, and way points.

Churches-Service Organizations

There are some 35 different church centers of most denominations in the cities, towns, and communities of Clatsop County.

Service clubs representing most of the major national and international organizations are meeting in Astoria, Seaside, Warrenton, and other communities.

Public Utilities

Publicly owned water systems are the main domestic source in Westport, Brownsmead, Knappa, Astoria, Warrenton, Seaside, Svensen, and Cannon Beach.

New and enlarged systems are needed in several areas along the Columbia River and the coastal strip where additional residences for industry workers are needed and

accommodations for the influx of tourists and summer residents drain heavily on the water systems.

Electric power is provided almost exclusively by the Pacific Power and Light Company. Residents living along the Nehalem Valley are supplied through the West Oregon Electric Cooperative at Vernonia, and the Westport area is supplied by the Clatskanie PUD.

Large transmission lines from the Bonneville power source are serving the fast developing industrial needs of the county, and natural gas lines also serve a wide area.

Agricultural Services

Agricultural and related state and federal agencies serving Clatsop residents include:

Oregon State University Experiment Station in the Walluski district.

USDA Agricultural Stabilization and Conservation Service, which provides cost assistance to farmers carrying out certain conservation practices of soil, water, and forest land improvements. Offices are in the Post Office in Astoria.

The USDA Soil Conservation Service, with staff serving the Clatsop and Warrenton Soil and Water Conservation Districts and also inspecting the farm soil and water practices approved under the ASCS. Offices are in the Astoria Post Office Building.

USDA Farmers Home Administration, providing var-

ious rural loans for farm purchase, homes, agricultural enterprises, and special projects generating rural income.

National Farm Loan and Production Credit associations. These farmer-owned lending associations provide regular assistance out of their Tillamook and Hillsboro offices.

An Oregon State Game Commission area representative, available through State Police offices.

Oregon State Forestry Department, Clatsop Unit, Walluski District, Astoria, Oregon. The state farm forester for Clatsop may be contacted through here also.

Oregon State University Seafoods Laboratory, a research branch of the food technology department of Oregon State University, is located at the east end of Astoria near the east-end mooring basin.

Cooperative Extension Service in agriculture, home economics, and 4-H youth work. The USDA Extension Service, Oregon State University Extension Service and Clatsop County cooperate in support of this program. The Extension staff serves to develop human, economic, and natural resources of Clatsop County through information and programs in agriculture, forestry, conservation, 4-H and other youth, home economics and family living, and public affairs. Extension programs are determined largely by advisory committees serving voluntarily in the various commodity, resource development, and planning committees.

The office is located in room 214 of the Astoria Post Office Building.

Land and Water Resources Committee Report

Forestry

This committee reviewed the major land and water resources of forestry, fisheries, industry, agriculture and recreation. Some of the problems, opportunities, and recommendations for resource development were also considered.

The subject of forestry is discussed more specifically under the Forestry Committee Report of this booklet. However, as the major land resource of Clatsop something of its economic significance is covered here.

Current annual yields of over 250 million board feet are harvested from the total forest acreage of 743,000 or 90 per cent of the county. Much of this acreage classed as forest is in very young stands or not presently stocked. Some 70 per cent is in pulpwood, sawtimber and pole categories, with 30 per cent essentially noncommercial. Much of this precommercial acreage is under the state forest management plan and has only in recent years been planted or seeded to conifers as part of the state management program. As this state-owned acreage comes into production over the coming years, 75 per cent of the proceeds from sale of the timber will go to the county as a tax offset. The state forestry department receives 25 per cent for cost of management.

Public ownership of nearly 30 per cent of Clatsop timberland is frequently questioned in light of how best such acreage could be managed and whether it might not better be under private enterprise. The state forestry people and county government should by all means continue on the 75-25 per cent management program and to take every opportunity to inform the public of their interest in

this resource. At an average of 1,000 board feet of growth annually per acre on the 141,000 acres of state-owned timber, this is a potential return of at least \$3 million each year. The 75 per cent share to the county would be something over \$2 million each year to apply toward school-district taxes and other tax-levying districts within the county.

Sales of state timber by open bidding were also seen by the committee as a means of determining fair prices for timber and timberland in Clatsop County, provided sales are small enough to allow even the smaller logging firms to bid.

Agricultural Lands

Farmlands total 39,501 acres or 7.7 per cent of the county acreage.

Farms are defined for the purpose of United States census data as places having 10 acres or less if grossing \$250 or more in agricultural products and places of more than 10 acres where agricultural gross is at least \$50 a year.

Clatsop farms number 486 according to the 1964 United States agricultural census. These farms have an average size of 81 acres and an investment per farm of \$31,931.

Farmlands, other than those acreages in some stage of forest growth, are used primarily for forage production. Long-lived stands of clovers and grasses planted on some 15,000 acres of tillable lands provide pasture, silage, and hay for the approximate 12,000 head of dairy and beef cattle.

Land Protected By Dikes

Some 17 diking and drainage districts along the Columbia and its tidal tributaries have been formed by land-owners to dike and drain agricultural lands. Some 14,000 acres or a major portion of the tillable lands are within these districts.

These districts are in various stages of activation and land maintenance or improvement.

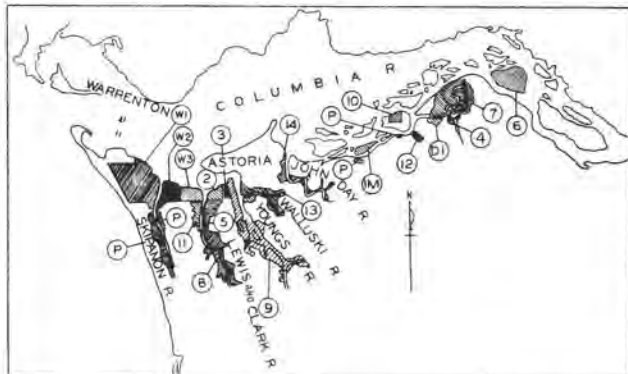


FIGURE 2.—Diking, drainage, and improvement districts of Clatsop County, Ore.: W1, W2, and W3, Warrenton diking districts; D1, Clatsop County drainage district; 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, and 14, diking districts; P, privately developed diking districts; and IM, Svensen Island improvement district.

Land Improvement

The major portion of the tillable farm acreage is supporting the livestock industry through forage production and is located on diked lands. Exceptions include Clatsop Plains, Necanicum Valley, Nehalem Valley, Knappa and Olney benchlands, and upper Lewis and Clark and Youngs River bottoms.

Diked lands are expensive to maintain, and during the last few decades of subparity returns to farmers these lands, in general, have deteriorated. In some cases dikes are not high enough during periods of extreme high water, floodgates have become less efficient and are in poor repair, and internal drainage ways are sluggish. In the case of the Youngs River drainage district, the dikes do not hold out high water. It is hoped that with the completion of a flood-control study of the lower Columbia River, authorized by Congress in July, 1965, and being undertaken by the Corps of U. S. Army Engineers, will come recommendations for federal financing of dike improvements, new floodgates, and pumping stations where needed.



Dikes and Flood Gates Protect Clatsop Farm Lands

Our bottom lands need considerable management in order to return the yields of seven or more tons per acre of hay equivalent that they are capable of. Maximum production and utilization of forage from these improved acres means increased supplies of milk and meat for local and northwest processors and markets.

Our diked lands also benefit from controlled summer irrigation that can be supplied through sprinkler irrigation and flooding. Where possible, new floodgates might be designed to allow for opening for irrigation.

Perhaps an opportunity exists for present districts or other groups to get together on forming a drainage district to cover each of the major areas, such as Brownsmead and Lewis and Clark and Youngs rivers.

Agricultural Income By Commodities

(1964 U. S. Census)

All crops sold	\$	\$ 227,415
Hay, silage and grass	69,177	
Vegetables	5,311	
Fruits	19,216	
Forest products and specialties	133,711	
All livestock products		2,764,896
Poultry (inc. broilers)	199,714	
Dairy products	759,699	
Livestock	505,000	
Mink	1,300,483	
Total gross agric. income		\$2,993,511

Agricultural Outlook

Dairy, beef, and sheep continue to be the chief means of utilizing forage production. However, riding horses are increasing in number sufficient to be a factor in both pasture and hay consumption. Some further opportunity may exist for parttime farmers to board horses or raise hay to supply some of the market.

Poultry has all but disappeared from Clatsop farms. One major egg producer remains with 8,000 to 10,000 birds and a local wholesale egg route. One major broiler producer is well established with a retail-store route extending from Long Beach, Washington, to Tillamook, Oregon.

There is some prospect for increased vegetable crops such as artichokes and cauliflower. Both of these have been demonstrated to produce during a slightly off season from supplies of other areas. Also, Willamette Valley canners are trying broccoli acreage in Tillamook County which, if successful, could involve acreages in Clatsop and other coast counties.

Holly and nursery crops are other specialty crops, along with small fruits and cranberries that are important to the future of the county. These are reviewed in the horticulture committee report.

Prospects for industrial growth and increased housing demands are placing pressure on close-in farm acreages, but diked lands, normally unsuited to housing, will probably continue in forage or crops. Too, some possibilities exist for formation of a forage company through which farmers could rent their fields. The company would concern itself with the efficient use of equipment for forage utilization and production.

Agricultural Planning and Zoning

The Land and Water committeemen were particularly interested in the Planning Commission report for Clatsop County's rural planning and zoning.

A Clatsop County Planning Commission was appointed in 1963 under provision of the Oregon laws and interim zoning regulations which were adopted at this time. The overall county ordinance for zoning was adopted by the County Board of Commissioners in 1966.

The purpose of this ordinance is to encourage appropriate and orderly physical development of the county through standards for provision of adequate open space for light and air, desired levels of population density, workable relationships of land uses to the transportation system, adequate community facilities, assurance of opportunities for effective utilization of land, and to promote in other ways public health, safety, convenience, and general welfare.

Building of residences in the urban and rural areas has required certain construction for many years in compliance with housing-loan requirements, fire-prevention specifications, sanitation, etc. The zoning ordinance provisions have adopted these same standards in the interests of the general public and property owners.

Professional planners from Washington and Marion counties met with the committee to share their experiences. Both said Clatsop was fortunate to be starting planning and zoning before major development occurs. Need for developing plans with the landowners being affected was also stressed. With better understanding, people look at planning and zoning as helpful to orderly resource development in rural areas rather than as a control. By providing for public information and discussion with each new application for rural industry or housing development, zoning ordinances assist local residents and the county governments in determining what is best for Clatsop.

Confusion of zoning requirements with tax laws and land values has also caused concern among some property owners. However, since the majority agree on the need for orderly development, most questions can be resolved through the joint efforts of the planning commission, county commissioners, and property owners.

Provisions for appeal or change of zone as higher use opportunities develop are well provided for in the ordinance, and landowners are welcomed to monthly planning commission meetings.



Open Ditches Provide Necessary Drainage to Diked Farmlands

Agricultural landowners are facing new state tax commission laws requiring assessors to value land on its market value. Lands in Clatsop along the coastal and Columbia River strips that are in a transition from farmland to other higher uses can no longer be taxed as farmland if selling for home sites. Those still farming their lands must either file annually for the farm-tax rate or form a special agricultural zone of farmland that automatically carries farm value. Agricultural landowners could easily zone the more clearly designated dike lands and river bottoms for agriculture use only, but many problems still exist in evaluation of lands where suburban housing and less intensive farming are closely mixed.

Industrial Growth

In 1961 the Clatsop County Court appointed an industrial development committee to serve in an advisory capacity to the county court in matters of industrial development. This committee subsequently filled the role of the county area development administration committee.

Under the continued name of the Clatsop Industrial Advisory Committee the group meets monthly to consider steps necessary to obtaining industrial land users. Industrial prospects request various kinds of information which the committee has worked to accumulate such as: location of sites; number of acres; probable price and prospect for clear title; foundation data; probable cost to prepare site; sewage disposal; proximity to airport, railroad, highway, and deep water; availability of housing; availability of water — potable and nonpotable; availability of power; availability of natural gas, and availability of labor.

PORT OF ASTORIA TERMINALS TONNAGE SUMMARY (10-year period)

	1957	1962	1967
No. Vessels	244	141	225
Tons Outbound	293,768 tons	154,436 tons	1,101,674 tons
Tons Inbound	83,742 tons	62,158 tons	61,910 tons
Total Tonnage	377,510 tons	216,594 tons	1,163,584 tons

OUTBOUND OCEAN TONNAGE

COMMODITY			
Logs F.B.M.	8,537,743 fbm	28,918,771 fbm	359,817,458 fbm
Lumber F.B.M.	4,606,223 fbm	44,915,188 fbm	24,883,573 fbm
Logs	17,173 tons	76,922 tons	957,113 tons
Lumber	7,370 tons	74,560 tons	41,303 tons
Poles and Piling	-----	763 tons	-----
Plywood	-----	944 tons	12,618 tons
Feed Pellets	-----	574 tons	-----
Wheat	172,905 tons	-----	83,551 tons
Flour	86,192 tons	564 tons	1,037 tons
Feed	7,796 tons	-----	-----
Canned Salmon	-----	83 tons	31 tons
General Cargo	1,795 tons	26 tons	3,698 tons
Bulk Peas	-----	-----	2,323 tons
Total Outbound	293,768 tons	154,436 tons	1,101,674 tons

INBOUND OCEAN TONNAGE

COMMODITY			
Petroleum	73,244 tons	43,620 tons	13,208 tons
Frozen Fish	10,141 tons	10,044 tons	11,974 tons
Wood Pulp	-----	-----	25,465 tons
Plywood	-----	-----	6,067 tons
General Cargo	273 tons	35 tons	510 tons
Canned Fish	84 tons	1,953 tons	1,419 tons
Newsprint	-----	-----	3,267 tons
Steel Piling	-----	6,506 tons	-----
Total Inbound	83,742 tons	62,158 tons	61,910 tons

A large acreage of county land south of Warrenton was purchased by the Pacific Power and Light Company as an industrial site. This is over 800 acres and has been taken under option and is being prepared for a multi-million dollar aluminum plant. Satellite industries are also expected to develop.

Port facility improvement, Crown Zellerbach Corporation Pulp Mill expansion at Wauna, and the plans for filling in additional waterfront areas with river dredgings all point toward industrial growth of the lower Columbia River.

Also of interest is the rapid development of condominium housing along the beach area from Gearhart to Seaside Cove.

Mineral Deposits

Magnetite, an ore of iron, is found concentrated in

the sands of the Columbia River near its mouth and adjacent bays. Other possible products of the sands include titanium, zirconium, glass, and abrasives. Two deposits of sand on the south bank of the Columbia River near Hammond are high in magnetite concentrates containing about 40 per cent magnetite.

Sand and gravel deposits and rocks suitable for crushed aggregate are found at many places in the county. Deposits of clay suitable for pottery and drain tile are located near Seaside.

Oil and gas exploration has been carried on periodically since 1910. These wells range in depth from 85 to 7,100 feet, the deepest near Seaside. To date no oil and very little gas has been found for present commercial development. Offshore exploration for gas and oil has been carried on the past few years also.

WATER RESOURCES

General Characteristics

Bountiful fresh-water supplies exist in Clatsop County rivers and streams, but not unconditionally. Flows are heavy in winter and extremely low in summer when all needs, including those for fish, are the greatest.

North Coast Basin studies by the Oregon State Water Resource Board, compiled in 1961, in cooperation with the county water resource committee, clearly indicated that large additional fresh water use for domestic and municipal purposes, irrigation, power development, industry, recreation, wildlife, and fish life would need to be made available for the most part from storage sites not now in existence.

Bounded by the Pacific Ocean on the west, the Columbia River on the north, the Nehalem River on the east, and the Nehalem and Necanicum rivers on the south, Clatsop is well supplied with water resources. The history and location of our cities and towns reflects a close tie

with water transportation. Houses of the early 1900's along the Lewis and Clark and Youngs rivers can still be found that faced the river transportation and not the present road.

Development today and tomorrow in Clatsop will depend heavily on the water oriented resources needed for transportation, industry, domestic supplies, recreation and fish life.

Stream and River Supplies

Clatsop rivers and streams flow from the numerous valleys and ravines leading from the rugged coastal mountains and forested hills to the Columbia River or Pacific Ocean. Numerous storage sites are located and waiting for public or private development for domestic, agricultural, industrial, recreational, and fish-life purposes.

The abundant total water supply comes from the following major river and stream sources mostly in the winter months.

TABLE 1. CLATSOP COUNTY STREAM INFORMATION

	Length Miles	Elevation Drop	Average Gradient Ft. Mile	Average Annual Yield in act. feet	Water Rights Irrigation	in CFS Total
Necanicum	21	1,360	65		1	20.0
Lewis & Clark	27	1,840	68	184,700		46.6
Klaskanine	3	20	7	144,400		0
North Fork	11	1,355	122			0
South Fork	12	1,100	92			0
Youngs River	23	1,040	45	403,300	1	79.4
Big Creek	13	1,760	135	127,100	0.3	44.9
Nehalem River						

TABLE 2. MONTHLY MEAN FLOWS IN CUBIC FEET PER SECOND

Stream	Years record	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Big Creek	7	66	166	307	396	382	287	205	97	62	43	30	27
Youngs River	31	96	276	409	382	364	277	177	78	45	20	10	17
N. Fork Klaskanine R. ...	6	31	82	133	175	139	105	66	25	17	12	6	6
Nehalem R. (at Foss)	19	922	3,606	6,309	5,887	6,644	4,143	2,707	1,246	549	262	146	183

Columbia River

As the largest river on the Pacific Coast of the United States, the Columbia River provides one of the greatest resources for people, agriculture, industry, recreation, and general development as any at man's disposal.

The Columbia has been made navigable to become one of the largest ports, with ocean traffic extending inland to The Dalles and beyond with river-barge traffic.

It drains 259,000 square miles of watershed extending over three states and Canada. There is an average flow maintained at The Dalles of 80,000 cubic feet per second, with the highest flow reaching 1/4 million cubic feet per second.

These flows hold salt water intrusion to a minimum, and, though it is considered a fresh-water port at Astoria, there will be more studies made of salinity to determine

quality for industrial and other purposes. One engineering firm has considered recommending a county-wide domestic water system that could take water from the Columbia upstream of Astoria, treat it, and pipe it to users along the river and the ocean-beach communities. Salt-water layers and dilutions within the estuary vary with changes in tide, seasonal river flows, and greater density of sea water containing about 33 parts of dissolved solids to 1,000 parts of water. The 30-mile point upstream is about where salinity influence from sea water intrusion becomes less than 1ppT, according to studies by the Corps of U. S. Army Engineers.

Lakes

Clatsop lakes are not numerous and only recently has a man-made lake for purposes other than domestic water supply become a reality. This is the private summer-home-site development on the Fishhawk River out of Birkenfeld in the Nehalem Valley. An earthen dam with concrete "glory-hole" and fish ladders will back up a 100-acre lake with a 2½ mile shoreline providing over 300 possible

cabin sites.

Natural lakes are being used primarily for recreation and include Cullaby Lake, approximately 200 acres in size and located between Warrenton and Seaside. It has extensive county park development and private homes. Coffenburg Lake, about 40 acres, is located in Fort Stevens State Park.

Other small sand-dune lakes include Crabapple, Long (location of Kiwanilong Girl Scout Camp), Sunset, Smith and West lakes. These are all located along the coastal strip of sand between Hammond and Gearhart.

Mountain lakes include a Lost Lake out of Westport and one above Spruce Run County Park on the lower Nehalem. Soapstone Lake is in the headwaters of the North Fork of the Nehalem and Quartz Lake is near the Sunset Highway west of the Quartz Creek Bridge.

Water reservoirs include the lakes of the Astoria water system northwest of Wickiup Mountain, the Seaside reservoir north of the Cannon Beach Highway junction, and the Warrenton reservoir on the upper Lewis and Clark River.

MAJOR DOMESTIC WATER SYSTEMS

Clatsop County Water Systems Serving Larger Cities and Communities

Name	Location of headworks and storage	Gals./day max. to min.	People served	No. of hookups	Additional possible hook-ups
Astoria inc.:	Wickiup Mountain	3½ Mil. to	10,700	3,500	Adequate for
Olney-Walluski	(Bear Creek Reservoir—	7½ million		86	normal expansion
Burnside	200 million gallons)			38	
Svensen (emergency)				30	
Willow Dale Dist.				11	
Williamsport				58	
John Day				58	
Fernhill				34	
Youngs River					
(Youngs Bay Water Co.)					
Seaside	South Fork Necanicum (Lake Storage—more needed)	477,612	5,000 to 12,000	2,000	Presently serving lg summer pop.
Warrenton also	Lewis and Clark River	2¼ million	3,180	983	Expansion & improvement needed
Gearhart master meter	(Reservoir and Lake)	max. & min.			
Svensen (Wickiup)	Little Creek		1,400	325+	About 100
(also serving 2 lg. trailer courts)	(250,000 gallons in main tank)				
Knappa	Mill City Creek			120	1,000 more with additional tanks
	Trib. Big Creek				100 easily—600
	(200,000 gallon tank)				with small changes
Lewis and Clark and	Barney Creek	320,000	2,000	600	
Youngs River	(Youngs River)	400,000			
	(½ M gallons storage)				
Cannon Beach and	Springs—2 miles			800	No limit on houses
Tolovana Park	east of Cannon Beach				industry none
	(over 100,000 gallons)				
Westport	West Creek	80,000	360	98, plus	500
(hookups include 3 trailer courts on master meter)	(200,000 gallon tank)			80 trailers	
Brownsmead	Creeks (1,000 gallon storage tanks)		250	100	At capacity
Oklahoma Hill	Underground springs			50	450 if pipes enlarged
(Wauna)	(reservoir capacity unknown)				

Ground Water

Rivers and streams contributing to Clatsop water supplies are mostly rain fed with no snow fields lasting into the spring season. Ground water supplies are limited, with most water systems depending on springs, creeks or rivers.

Sand-dune waters of the coastal strip are an exception to the well-water conditions of most of the county, however, and individual wells and multi-residence systems for domestic purposes are in use along the Clatsop Plains area.

Potential dune water supplies of over one million gallons per day are possible, according to present studies of the dunes area sponsored by the county board of commissioners in cooperation with the U. S. Geological Survey and the U.S.D.A. Farmers Home Administration. This study is part of a total survey of water and sewage systems and needs for the entire county.

New Industrial Water Use

The Crown Zellerbach pulp mill at Wauna is presently treating and using Columbia River water in the plant processes at the rate of 40 million gallons per day. Water containing industrial wastes is held in a system of settling basins before being returned to the river.

The proposed aluminum plant will require from about 2 million gallons per day at the outset to over 20 million gallons a day under full development. This maximum depends on whether or not a filtering and recirculating system is installed. If installed, the plant would require an amount near the minimum $2\frac{1}{2}$ million gallons per day.

Development of the Youngs River Dam and reservoir site held by Astoria for many years as a new source of

domestic and/or industrial water may soon be needed to meet new requirements.

Future needs of the Seaside-to-Warrenton area may also require development of an additional Lewis and Clark River dam and reservoir site, and Seaside has a potential site also on the south fork of the Necanicum near Kidders Butte, where water is presently diverted into the mainline.

Agricultural Water Uses

The Clatsop County Water Resources Committee estimated that about 750 acres of forage crops are irrigated by flooding from tide gates on diked lands. The 1964 census of agriculture reported 209 acres of sprinkling-irrigated land. These acres are largely adjacent to streams or rivers as a source of water and are under irrigation water permits or are eligible to receive permits on application.

All irrigation development in the county has been accomplished on an individual farm basis. Irrigation usage fluctuates widely from dry years to wet years both in acreage irrigated and volume of water used.

In most cases pasture irrigation has not been constantly practiced with success because of its demand on labor, investment in equipment, and cost of operating. The OSU experiment station sprinkler irrigates about 30 acres of improved pasture from May to September. This requires extra labor but contributes to the \$120-per-acre value in feed equivalent being produced and utilized from these well-managed acres.

Streams closed to further irrigation or diversion rights for any purpose other than for the protection and encouragement of fish life include the Klaskanine River and tributaries, the Lewis and Clark River and Big Creek.

POLLUTION PROBLEMS

Water Pollution

Water-pollution problems presented to the committee by the county sanitarian emphasized the need for planning and overall coordination of sewer and water developments.

The Clatsop beaches and parks are a vast recreational playground for people from the large metropolitan areas of the Pacific Northwest. The northeast part of this county is becoming a large industrial area because of the Crown Zellerbach Corporation paper mill — a multimillion-dollar complex. New homes and commercial buildings are under construction. Also, the coast area is rapidly expanding to the demands for summer homes, condominium living, and tourist travel.

Problems of sewage disposal and water pollution are numerous in these fast-growing areas as well as in older developed areas. Clatsop County lands in general have a high water table and relatively impervious soils. Septic tanks are inadequate for handling sewage in many high-density areas.

All subsurface disposal fields must comply with state regulations. They shall not be used in heavy clay or other impervious soil formation, in low swampy areas, or where the ground water during any season of the year will be within 24 inches of the finished ground surface.

All new home sites where septic tanks and drainfields are to be used must have a minimum of 10,000 square feet, according to state sanitation requirements. However, the county sanitarian has the right to ask for a larger site if adequate sewage disposal systems cannot be installed because of terrain or soil conditions. Smaller home sites are

possible when served by community sewer systems.

Many water districts are being asked to consider districts for sewage also. A county survey to coordinate water and sewage development is currently underway.

Most domestic water sources come out of logging or forested areas, and since at certain times of the year the water shows turbidity, there is need for reservoirs and settling tanks.

The amount of water used per home today increases with automatic washers, dishwaters, etc. For example, 76 gallons per day is required for each person as a minimum. Therefore, Clatsop residents should be thinking in terms of water supplies for the future as well as of the needs of today.

In 1939 less than 17 per cent of Oregon's population was served by sewage-disposal plants. Raw sewage was being dumped into many of Oregon's rivers and streams. At that time dissolved oxygen in the Willamette River reached "zero" parts per million nearly every summer. Human waste in some rivers was a public health hazard.

According to Oregon sanitary authority officials, there are now 250 sewage treatment plants in Oregon, serving 98 per cent of the "sewered" population. Since 1946 over \$140 million has been spent by Oregonians for sewage work.

Air Pollution

The 1965 state legislature established an air-pollution board, and Oregon became the first state with a state-wide air-quality control program.

In 1959 air pollution work was transferred to the State Sanitary Authority. Oregon is one of four states with a single agency responsible for both water and air pollution programs for control. Air pollution, as defined by the board, is the presence of one or more air contaminants of quality, characteristics, and of a duration which creates conditions contrary to public policy. (Agricultural and land-clearing practices were excluded.)

Since 1951 many millions of dollars have been spent on air-pollution control. Problems still exist with smog over Portland and Medford and the pall of smoke each fall in the Willamette Valley from field burning, forest slash, highway construction, pulp mills, motor exhaust, sawmill burners, and fluoride from aluminum plants. Sampling stations have measured some air impurities at intervals and various locations, and a permanent station will be in use in Portland by 1967. The source of major pollutants are of interest, with 65 per cent coming from the general public, 25 per cent from industry, and 10 per cent from commercial establishments.

Causes of Contamination

Considerable publicity has called attention to certain agricultural and forest-products practices causing contamination. Agricultural contaminants from burning of 120,000 acres of seed fields deposits approximately 5 million pounds of particulate matter in the mid-Willamette control-agency area. However, the seed industry is a \$30 million-per-year industry in need of relief from pestilence, and burning is the main solution or remedy.

Forest-product wigwam burners create a problem, too, in much of the state, but the yearly bark waste in Jackson

County alone would fill a building the size of a football field 34 stories high.

Oregon's kraft paper mills have increased from one in 1949 to six in 1966, producing some 4,000 tons per day. Odors from 1 to 10 parts per billion can be objectionable to humans' sense of smell but not be detrimental in any other way. Pulp production is one of the nation's ten largest industries, and the Pacific Northwest is producing 6 per cent of the world's total.

Sanitary authority officials believe Oregon fortunate to have started early in air-pollution-control work. Communities will find that they can have as clean air as they are willing to work or pay for. Otherwise, damage to health and property and reduced enjoyment may result.

The proposed location of the Northwest Aluminum plant at Warrenton will introduce the need for tests and monitoring for possible fluoride toxicity to plants and animals over the residential, agricultural, and recreational areas reasonably adjacent to the plant. A sampling and testing program to determine fluoride levels both before and after the start of the plant has been arranged with Oregon State University by N. W. Aluminum plant officials. This will provide data usable by either the company officials or the property owners who may be damaged.

According to the State Sanitary Authority, fluorides cause damage to certain plants and foraging livestock. Stationary industrial sources emitting fluorides cause the greatest amount of damage adjacent to the polluting source and less damage away from it, with 10 miles usually considered the outer point of significance. The latest in processes and equipment for arresting air contaminants has been assured by the Northwest Aluminum firm, and little or no difficulty is expected.

COMMERCIAL AND SPORT FISHERY

Ocean and Columbia River Commercial Fishery

According to the commercial fishermen serving on the Land and Water Committee, Clatsop County is ideally situated at the mouth of the Columbia River, and the Clatsop-based fishing industry represents a large and important part of Pacific fishery. It is expected that present and additional oceanography research and seafood research in this area will lead to one of the largest research centers for seafood resources in the United States.

The Oregon State University Seafoods Laboratory at Astoria is of great benefit to the fisheries. This laboratory developed the moist pellet food for salmon hatcheries that has led to great improvement in fingerling production and survival. The large silver-salmon runs returning to the Youngs Bay and Klaskanine hatchery are a direct benefit to the sportsmen and commercial fishermen. Similar increases in hatchery returns and increased runs are being experienced where the comparatively new processed food is used.

Possible Klaskanine Expansion

The following table shows a comparison between present production of three-year-old adult coho salmon and estimated increased production that can be obtained with a supplementary water supply at the Klaskanine salmon hatchery (excerpt from Oregon Fish Commission report of June 1965).

	Present numbers of fish	Expected numbers of fish	Increased numbers of fish
Production distribution			
Yearlings released	1,600,000	2,200,000	600,000
1/			
Ocean-caught adults	44,160	60,720	16,560
2/			
Youngs Bay-caught adults	7,488	10,296	2,808
3/			
Youngs Bay-caught jacks, 1964	7,986	7,986	
4/			
Total harvest (no. of fish)	59,634	79,002	19,368
1/			
Adults returning to hatchery	11,712	16,104	4,392
6/			
Total value	\$144,539	\$198,742	\$54,203

- 1/ Estimates are based on a 2.3 to 1 catch-to-escapement ratio for 3-year-old adult coho.
- 2/ Returns are based on a 1.2% smolt-to-adult survival to the hatchery and a 39% harvest rate by the Youngs Bay fishery.
- 3/ No benefits have been assigned to this category, although it is reasonable to assume that the commercial jack catch will increase proportionately to the adults catch with increased hatchery production.

Jack coho in Youngs Bay have an average weight of approximately 2 pounds and are valued at about 15 cents per pound.

- 4/ Estimates include 3-year-old adult and jack coho salmon.
- 5/ Estimates are for 3-year-old adult coho only.
- 6/ The bases used for estimating these values were: an average weight of 8 pounds for troll-caught coho, an average weight of 9.3 pounds for Youngs Bay-caught coho, and an average price of 35c and 30c per pounds respectively.

The use of the OSU-developed, pelletized, and processed food for hatchery fish has increased the return of salmon to the Klaskanine hatchery and other hatcheries to the extent that increased production for both commercial and sport fishery in the Columbia River system has tremendous possibilities. With additional water from proposed upstream storage, the Klaskanine hatchery could enhance the Youngs River, lower Columbia, and offshore commercial fisheries by some \$50 thousand annually, plus the value of the sport catch.

Propagation of salmon should have a high priority on the list of goals and projects for development of water resources of this area. Salmon production and harvests could increase to the benefit of both sportsmen and the commercial fishermen.

A report of the influence of the Klaskanine hatchery on the salmon fishery of Youngs Bay follows:

Total 1965 commercial catch:	No. of fish	Pounds
Adults	21,068	214,894
Jacks	6,050	19,965

Total	27,118	234,859
-------------	--------	---------

Klaskanine Hatchery Returns:	8,431 adult cohoes
	18,169 jacks

The above are official Oregon Fish Commission figures. The 1966 catch was comparable to 1965. The estimated dollar value of the commercial coho catch based on prices paid to gillnet fishermen during the 1965 season was \$49,320.39. In addition to the above, the Klaskanine hatchery contributed substantially to the lower Columbia River sport and gillnet fishery as well as the offshore sport and commercial troll fishery. A further contribution made by the Klaskanine hatchery was by distribution of surplus spawning fish to other streams, plus distribution of eggs to other fishery agencies.

Value of Commercial Fishery

The total value of canneries, boats and gear is approximately \$20 million. The approximate income to the fishermen working out of Clatsop ports amounts to nearly \$4 million annually. The wholesale value of fisheries products processed locally and including the Alaska pack and imported tuna total some \$58 million. The employees in the processing plants total around 850 full-time and 200 part-time, with roughly \$3 million in wages. This does not include supervisory personnel. These estimates are based on information available in 1967 from commercial fishermen on the committee and it was recognized that income and product supply vary from year to year.

Salmon And Tuna

The approximate value of the salmon and tuna canneries in this area amounts to a capital investment of \$14.5

million in plants, tenders, scows, floating equipment, and gear. The wholesale value of the salmon and tuna products amount to approximately \$53.5 million annually.

The salmon and tuna trolling fleet consists of over 65 vessels, with an average capital investment of \$15,000 each, and an average gross stock or catch of \$10,000 each.

With increased tuna landings in Oregon, amounting to over 6,000 tons in 1966, new tuna boats, otter trawl boats converted for tuna and boats from other coastal ports add considerably to the fleet of large, expensive tuna boats either based here or using Clatsop ports during the tuna season.

The Columbia River gillnetters have approximately 200 boats, with an average capital investment of \$12,000 each, and a gross stock average of \$8,000.



Readying a Columbia River Gillnetter

Otter Trawl Fishery

An evaluation of the bottom-fish processors shows a capital investment in plants of \$800,000. There are 23 vessels at an average value of \$45,000 each, or about \$1 million. These vessels produce a gross stock (gross catch) worth approximately \$1 million per year to the fishermen, and having a wholesale or processed value of \$4.5 million. It should be pointed out that this fishery has tremendous possibilities for growth for this area, both in the harvesting of resources adjacent to our coast and in the processing of fisheries products harvested from Alaskan water. This area is ideally located for a home base for the larger vessels that are now being planned and built to harvest the huge bottom-fish resources of Alaska. It should be noted that the Russian and Japanese fishermen have to travel many thousands of miles to harvest these same waters that are so close to United States fisheries.

Shrimp

The otter trawl fishery also includes catching of shrimp representing a total gross stock of approximately 1 million pounds in the first six months of 1967 worth at least \$250,000 at wholesale value.

Crab

The crab fishery is composed of about 20 vessels with an average gross stock of \$20,000 and an average capital investment of \$20,000 each for boats and gear. Small plants handling fresh crab add to make a wholesale product value of over \$500,000 and also a plant, boat and gear

value of over \$500,000.

The Oregon Fish Commission report of commercial landings in 1965 showed 68 million pounds total of food-fish and shellfish landings in Oregon. This represented a dockside value to Oregon's commercial fishermen of well over \$7 million.

Catch of Salmon — 1965
Commercial and Sport
Total Take in Oregon Waters *

Sport	Commercial
Per cent of total 18.1	Gillnet 530,900
Total 348,318	Troll 1,044,933

Catch Landings by Species in Specific Areas

Mouth of Columbia	Chinook	Coho	Total
Sport catch	53,181	251,762	304,943
Commercial catch	13,594	465,264	478,858

(Includes Washington sport and commercial landings)

Coastal Catch

Sport catch (Ore. anglers)	260,727
Commercial catch	1,044,933

Newport

Sport catch	688	34,681	35,369
Commercial catch	14,544	202,854	217,398

* Oregon sport catch from punch-card survey, Oregon Game Commission; Commercial catch figures supplied by Oregon Fish Commission.

Import Problems

The commercial fishermen of this committee also pointed out that the Soviet fleet took far more ocean perch in their first year off our coast than our domestic fisheries harvested in the last five years. The problem of almost free access to the United States markets by foreign fishing nations for imports of bottom fish species has come to a point where in 1966 over 80 per cent of these species were imports. Our decreasing fishery is only allowed to fish with limited catch because of a lack of markets for their

product. It would be of value for this area to support a quota that would reserve a part of the United States markets to our domestic fisheries.

Sports Fishery

According to the Oregon Game Commission, activity at the mouth of the Columbia River during the 1966 sport-fishing season is described by the following chart:

Total for Oregon and Washington: No. Boats	41,400
Total Anglers	163,900

Total for Oregon:

Numbers of Anglers for type boat: Charter	16,494
Pleasure ..	22,438
Kickers ..	8,800
Total Anglers	47,732

Identity of Catch: No. of Chinook	20,464
No. of Silvers	53,572

According to the Game Commission studies, anglers averaged 1.58 fish per trip, costing by charter \$19 a day, or \$12 per fish. The value to the county through services was equivalent to about \$200,000, plus a lesser value of \$90,000 for 30,000 fish at \$3 each caught on the other than charter boats, and a total of about \$300,000 of income generated by the sport salmon fishery.

Up-river Columbia River fishing from the Astoria bridge to Tenasillahe Island was an additional and growing facet of sport fishery. Fishermen from the banks and boats fishing for salmon totaled 6,527, accounting for 963 fish.

Clam Harvest - Clatsop Beaches

	Year	Diggers	Clams
Sport	1956	51,500	1,356,000
	1966	78,400	1,920,000
Commercial	1956	3,231	490,000
	1966	2,200	250,000

RECREATIONAL RESOURCES

National, State, and County Park Facilities

Fort Clatsop National Memorial commemorates the headquarters for Lewis and Clark during their stay in 1805-1806.

Bradley State Park, on Highway 30 at the crest of the once-famed Bradley loops leading up a steep mountainside toward Astoria from Westport, provides picnicking and a rest stop overlooking beautiful Puget Island, the Crown-Zellerbach Pulp Mill, and the Columbia River.

Fort Stevens State Park features Pacific Ocean beaches and clam digging, the wreck of the *Peter Iredale*, Coffenburg Lake, and over 500 trailer and camping sites beautifully arranged in forested areas. The park now extends to the south jetty and from the ridge road to the ocean, and includes some 3,000 acres. It was made possible originally by a gift from the county to the Oregon Parks Department of land between the ridge road and the Burma road, and from the Peter Iredale road to the Camp Kiwanilong road.

Oswald West State Park is located in Tillamook County just south of the Clatsop beach communities of Arch Cape. It features overnight camping in view of the Pacific Ocean and exciting trails to view the ocean, Cape Falcon, and Neahkahnie Mountain.

Saddle Mountain Park, in about the center of the

county, provides a vista trail to the top of this 3,200-foot mountain. Camping and picnicking are also available. A paved road leads from the Sunset Highway (US 26).

Ecola State Park provides picnicking with a spectacular ocean view. Sea lions are visible on the outer rock ledges during the summer months.

Hug Point is a unique state picnic facility with tables on the beach.

John Day County Park, located three miles east of Astoria, is being developed into a 35-acre complex of picnicking areas, nature trails, swimming, boating, and play fields. Picnicking and boat-ramp facilities are now in use.

Spruce Run County Park is named for the creek that flows into the lower Nehalem River at the park site. This park provides camping and picnicking on the Nehalem River inland from the coastal winds and fog.

Cullaby Lake County Park is a new development providing picnicking and water sports. One site is at the north end of the lake, and another, larger, is near the center of the lake. Both are located less than a mile from Highway 101.

City parks and museums tell the story and history of early development in the lower Columbia River area, (terminus of the epic Lewis and Clark Expedition), and the exciting link between land and sea travel of the early days.



Spruce Run County Park on Nehalem River

Boat Ramps

Many small boat-launching ramps are maintained by the city and county road departments and state park personnel. These ramps provide sport fishermen and pleasure-boat enthusiasts with access to most rivers, lakes, and the Columbia River.

Small boat ramps

Astoria East End	Coffenbury Lake	Lost Lake
Yacht Club	Crabapple Lake	Aldrich Point
Warrenton	Cullaby Lake	John Day
Hammond	Sunset Lake	Klaskanine River
Westport		Necanicum River

Boat basins with ramps

Astoria West End Basin	Hammond Ramp Basin
East End Basin	Warrenton Basin (2)
Yacht Club	

Summary of Big Game Hunting in Clatsop for 1966

Season	Hunters	Man-days	Kill	Estimated expenditure *
Totals	11,833	71,415	2,578	\$682,000
Deer	4,358	30,302	1,575	\$289,400
Elk	7,475	41,113	1,003	392,600

* A reduced estimate for Clatsop is \$350,000. (National estimates account for hunters spending \$9.95 per day; Clatsop hunters for the most part travel from home and therefore would spend less than this).

Land and Water Recreation Possibilities

The Clatsop County Parks Committee, formed in 1957, as a subcommittee of the Land Use Committee, is advisory to the county board of commissioners in promoting and developing park and recreational facilities throughout the county. Their work has been particularly rewarding as a result of the numerous pieces of county land held over the years for recreational development through the vision and dedication of county officials.

The county has been budgeting for park development the past eight years, and matching funds have been available from both Public Law 566 and the new National Land and Water act funds resulting from a citizenry charge on use of national parks. These latter funds will be made avail-

able at about \$9,000 per year upon state approval of projects and dependent on county matching funds.

Recreational use of tidal islands in the Columbia, particularly upstream from Astoria, is of long standing, and these islands provide excellent duck hunting for local residents and visitors. Establishing permanent recreational areas on at least some of the islands is currently proposed by sportsmen's groups.

Hammond boat basin and ramp facilities for the Columbia River sport fishery are growing rapidly to meet the needs of ever-increasing trailer and pleasure-boat owners. Hammond is developing larger and larger ramp and parking facilities and has increased the ramp use from 800 launchings in 1965 to an estimated 5,000 in 1967.

Also, the new Fort Stevens State Park expansion program plans to have small-craft-launching facilities near Swash Lake and on the lee side of Clatsop Spit. These expansions are needed to accommodate salmon anglers frequenting the mouth of the Columbia River. Competition for service to the sports fishermen is keen among the lower river communities. At present Ilwaco's boat harbor is the largest and has quick access to the Columbia River and ocean fishing waters.

Tourism Development

"Non-resident tourists currently contribute roughly \$10 million to the Clatsop economy", according to the 1965 report of a survey firm retained by the travel information division of the Oregon State Highway Department and the Pacific Power and Light Company.

According to the Seaside Chamber of Commerce, some 41,000 tourists were serviced in 1966 through the information center. Chamber officials estimate that the tourist industry is increasing by one third each year. It is fast approaching a \$20 million-per-year industry and deserves much attention from groups working to develop county resources. It is significant, too, that Oregon income in 1967 from tourism was \$259 million, 2 per cent over 1966.

Opportunities for Beach Communities

A county-wide committee is working on plans for an exposition and recreation center located on county land along the coastal dunes north of Gearhart. Such a facility, if approved by the voters for tax support, could provide



Condominiums Provide Year-Around Living Along Clatsop Beaches

for conventions, pageants, concerts, county fairs, racing, rodeos, picnicking, beach access, and a host of services and activities meaningful to county residents and attractive to tourists and visitors.

Beach access and more opportunity for visitors to see the ocean as they pass through the county is needed. Continued improvement of U.S. Highway 26, U.S. Highway 101, and U.S. Highway 30 is being made to give the needed free flow of traffic and truck movement into and out of the area.

Also needed, according to Seaside Chamber officials, is a county-wide Chamber of Commerce service to provide brochures and tourist information. An educational program for tourist center employees on what Clatsop has to offer tourists was also suggested.

Land and Water Resources Development Recommendations

The committee called attention to the following general and specific possibilities for development:

★ Because 70 per cent of the county area is under increasingly intensive forest management by major timber companies and the State of Oregon, planning for maximum use and orderly development of the rural and suburban areas along the Columbia River, the coast, and inland river valleys becomes extremely important.

Much use is presently made of the miles of forest access roads for hunting, fishing, horseback riding, and sightseeing. It is possible with planning and cooperation among the landowners, the public, and timber owners to increase greatly the recreational use of timberlands in conjunction with recreational developments along our rivers and coastal area.

Present landowners of the rural areas need assistance in planning for maximum development of their lands and in dealing with the changes and pressures of trying to stay on the land with low agricultural income while encouraged to sell by the demand for their more choice land for suburban homes or a weekend spot for crowded inlanders.

Members of the land and water committee recommended that Clatsop County have a full-time, professional planner to work with all interested rural organizations and landowners in their efforts to improve their lands, income, and communities.

The committee also recommended that every effort be made to bring about better communication and understanding between landowners and the county planning commission in support of orderly growth for the rural areas.

★ Agricultural lands protected by dikes make up the major portion of the some 15,000 acres of cropland in Clatsop. Recent periods of high tides, held up by ocean storms and often heavy rainfall, have caused overflowing and weakening of miles of dikes. Major reconstruction and repair is under survey by the U.S. Corps of Army Engineers, and landowners will need to work diligently to gain federal legislative support and appropriations to carry out the needed improvements to Clatsop dikes.

It has been recommended, also, that landowners update drainage and diking district boards and maintenance work including consideration of new, larger districts being formed to plan for and facilitate the use of federal assistance funds.

Experimentation for possibilities of new crop produc-

tion needs to be intensified through OSU research and Extension in order to utilize the cropland acres no longer under intense dairy or beef production.

★ Industrial developments along the Columbia River, particularly in the lower area of Clatsop County, are expected to increase rapidly within the near future. Satellite plants will come with new, large industries such as the Northwest Aluminum plant. Port of Astoria expansion includes improved barge-freight handling and rebuilt docks. Also, further industrial sites are being made possible along the river frontage from Warrenton to Westport by dredging and filling behind dock frontage.

The Oregon Land Board's position that the state of Oregon owns all lands to high water along navigable rivers and the ocean, except where state deeds have been issued, needs to be clarified through state legislation in order to facilitate further development of industrial river-frontage and beach-frontage properties in Clatsop County.

Commercial and sport fishery people need to be supported in their efforts to have industrial development compatible with water purity necessary for fish life.

Air-pollution problems will need to be dealt with largely by local community effort as industry develops. Other resources, such as tourism, need to be further studied to determine long-time benefit comparisons with alternate land or water use, such as homes and large payroll industry.

The seafood industry holds many opportunities for expansion, and the efforts of the OSU seafood laboratory should be more widely understood and supported. New fish products, artificial rearing for bottom fish, clams, and many other important food species, improved fishing techniques, and processing and marketing aids are all progressing, but only as rapidly as support permits.

County planning for types and locations of new industries compatible with desired growth should be continued and expanded.

★ Water development needs include expansion of domestic systems for many of the growing communities along the Columbia or ocean beaches. New demands from industries, needs for additional hatchery-fish production, possible intensification of agricultural production, and certain recreational development all call for additional water. Impoundment of winter runoff for use during summer and fall periods of low flow has been the generally accepted means of obtaining more water.

It is recommended that the county water resources committee continue to promote a dam above the Klaskanine Hatchery to expand its salmon-rearing capacity.

This committee should also assist with implementation of the overall county water study of 1967 insofar as it assists with efficient and adequate water development for the needs of the entire county.

★ Recreational development is surging ahead in various ways to accommodate increasing visitors to the ocean beaches, vacationers and campers at the several county and state parks, and greater numbers of salmon sports-fishermen at the mouth of the Columbia River as well as along its sandbank shores near Westport.

The County Board of Commissioners, through their county parks committee, should continue to develop county parks and boat ramp facilities.

Columbia River islands, where waterfowl hunting is a major recreation are increasingly subjected to possible sale for private use. Local sportsmen's groups have requested that the County Board of Commissioners try to

set aside as many of these islands as practical for public recreational use.

Development of ocean-beach-driver access, tourist facilities, and overall concern for beautification and attractiveness of the county should continue to be an active goal of resource-development groups.

The work of the intercounty government committee to bring together on a monthly basis the officials of county, city, towns, and communities under the leadership of the county commission is appreciated and to be encouraged as a strong medium for cooperative county planning and development.

County-wide brochures for tourists and general promotion of Clatsop are needed, as is an educational program for tourist-center employees on the historic and contemporary places of interest.



County Parks Committee

Money and Credit Committee Report

Information regarding the money-and-credit situation in Clatsop and a review of some of the problems and opportunities as seen by the committeemen are given here with their recommendations for possible improvement.

Financing of agricultural and related businesses, rural and suburban housing, and recreational facilities associated with rural areas is a most essential part of the rural and urban economy.

Nationally, 90% of over 14,000 banks are involved in lending to farmers. On January 1, 1965, these banks had outstanding credit to agriculture and the farmer in excess of \$9.6 billion. Nearly \$7 billion of this represented operating credit of medium term and seasonal nature. This represents a 138% increase in the last 10 years of bank participation in the needs of farmers, according to the American Bankers Association. By using technology and financial credit as tools of production, America's farmers are providing the greatest volume of food in history.

In Oregon the amount of farm real-estate loans held by the principal lenders on January 1, 1967, were:

		% CHANGE 1 YR. AGO	% CHANGE 5 YRS. AGO
Banks	\$ 27,361,000	5%	60%
Federal land banks	80,531,000	14	68
Life insurance companies	88,235,000	12	74
Individuals & others (approximate) ..	302,681,000	11	66
Farmers Home Administration	4,372,000	-4	9
TOTAL	\$503,180,000	11%	66%

Non-real-estate loans in Oregon used for current operating and living expenses and repayable in one year, plus machinery, livestock, and property-improvement loans repayable over more than one year, on January 1, 1967, as held by principal lenders were:

		% CHANGE 1 YR. AGO	% CHANGE 5 YRS. AGO
Banks	\$102,817,000	11%	63%
Production credit associations	57,837,000	15	55
Farmers Home Administration	7,993,000	2	37
TOTAL	\$168,647,000	12%	59%

Oregon farmers had production expenses of over \$400 million in 1966, including \$25 million paid in interest on mortgaged indebtedness.

Clatsop Lending Agencies

Clatsop banks and loan agencies include: U.S. National Bank of Oregon—Astoria, Seaside, and Warrenton branches; First National Bank of Oregon—Astoria, and Seaside branches; Pacific First Federal Savings and Loan—Astoria; Federal Land Bank—Tillamook (bi-weekly office hours); Production Credit Association—Astoria, and Hillsboro (on call in Clatsop's); Farmers Home Administration (field man serves Clatsop and Columbia counties); and private lenders.

Clatsop Banking Services

Clatsop County bankers offer a wide range of banking services for agriculture and business in the lower Columbia area. Common types of agricultural financing are for business-operating loans, loans for construction of barns, additions to buildings or homes, home improvement, personal loans, loans secured by farm machinery and livestock, farm real-estate loans, machinery purchase loans, and short-term loans for various needs.

Most loans are on a very personal basis with the bank. The borrower's financial statement, credit history, reputation, and skill or ability in his own field are of prime importance to the lending agency. Banks also loan through the guaranteed or insured loans from certain federal agencies. Examples of federally supported loans are: Federal Housing Administration loans for residential purchase, Farmer's Home Administration loans for purchase of farms, livestock, or machinery in which a private bank participates, and Veterans Farm Purchase loans. Although most government-insured loans are more lenient with regard to the borrower's financial condition or credit worthiness, all loans require a sound basis for repayment from income generated by the farm or business operation. It is the borrower's ability to repay that is of prime importance in all credit and finance transactions.

Savings and Loan Associations

There are savings and loan associations in Clatsop which finance a large number of home loans. In 1965 the First Federal Savings and Loan Association made loans

totaling 6 million dollars. Regulations specify that all housing loans be paid in monthly installments, which may limit such loans for farm homes. However, rural housing loans can be made within the surrounding 50-mile area. Loans can also be made for commercial building or any real property improvements. A second savings and loan association, the Equitable Savings and Loan Association, started during 1967 and is also located in Astoria. The Benjamin Franklin Savings and Loan Association is expected to open offices in Seaside in 1968.

Federal Land Bank

This system has been a major source of low-cost, long-term agricultural credit of the past 50 years. It is completely owned by farmer members, and funds used in lending operations are obtained primarily from American investors in land bank bonds.

Nationally, there are 12 federal land banks and 700 local associations representing some 390,000 borrower-members who hold \$4.7 billion in loans outstanding. This amounts to 20% of all current farm-mortgage credit in the country. The federal land banks operate under the National Farm Credit Administration, as does its companion agency, the Production Credit Association. The PCA is known principally as a source of short-term operating loans made on livestock, equipment, irrigation, or other production inputs.

Farmers Home Administration (FHA)

This federal lending agency has wide application to relieving hardship often resulting on farms underfinanced or overindebted. Loans are made to reorganize production methods, improve housing, and expand land and building resources. Rural businesses including recreational developments are also a part of FHA's package. Large loans and some grants are available for rural and small urban water and sewer facilities. Long-range loans up to 40 years are the outstanding feature of Farmers Home Administration loans. Applicants must be unable to get financial aid from other sources to be eligible.

Federal Housing Administration

Information was obtained from the Portland office of FHA. This loan source was started in 1934 and deals primarily with urban properties. However, it has a subdivision program pertaining to rural areas that are becoming part of an expanding urban complex. FHA is under the Department of Housing and Urban Development. FHA loans no money but only insures loans made through the normal banking channels.

Private Lenders

Individuals financially able and interested in making real-estate loans can often be contacted through realtors, bankers, and others. Depending on the borrower's ability to repay and length of time money is needed, private sources of funds may be useful.

Clatsop Bank Deposits

Current levels of savings and total deposits in local banks are shown in the accompanying tabulation:

Comparison of Clatsop Bank Deposits & Loans; past 10 yrs. (urban and rural transactions)

	1957		1967	
	Deposits		Loans	
	(millions of dollars)			
U.S. National Bank of Oregon branches in Astoria and War- renton plus 1st National Bank of Oregon in Astoria	\$26.5	\$7.0	\$41.5	\$16.5
1st National Bank of Oregon in Seaside	7.3	2.8	9.7	3.7
U.S. National Bank of Oregon, Seaside Branch			5.1	3.0

Federal Land Bank Farm Real Estate and Production Credit Loans in Clatsop for the Past Ten Years

	1957 (millions)	1967
Real property	.9	1.2
Production Credit Assn. loans	.5	.7

FARMERS HOME ADMINISTRATION, St. Helens Office, Serving Clatsop and Columbia counties: The dollar value of loans made in 1967 was \$342,370. Outstanding FHA loans in Clatsop County as of 1967 amounted to \$700,000 in farm and rural housing loans and \$414,000 in water and sewage loans.

Problems

Agriculture is moving at a rapid pace today toward larger mechanized farms requiring considerable amounts of capital for annual operating needs.

Federal Land Bank bonds sold to United States investors as a source of loan money for United States farmers cost 6.2% in late 1967—the highest rate ever paid for Federal Land Bank bonds.

Competition for money determines the interest rates and, with a shortage of loan funds developing, farm enterprises need to show almost certain profit to obtain capital. Money is needed for longer periods than specified by banks or other sources that need to take so few risks on a "lenders' market" for money.

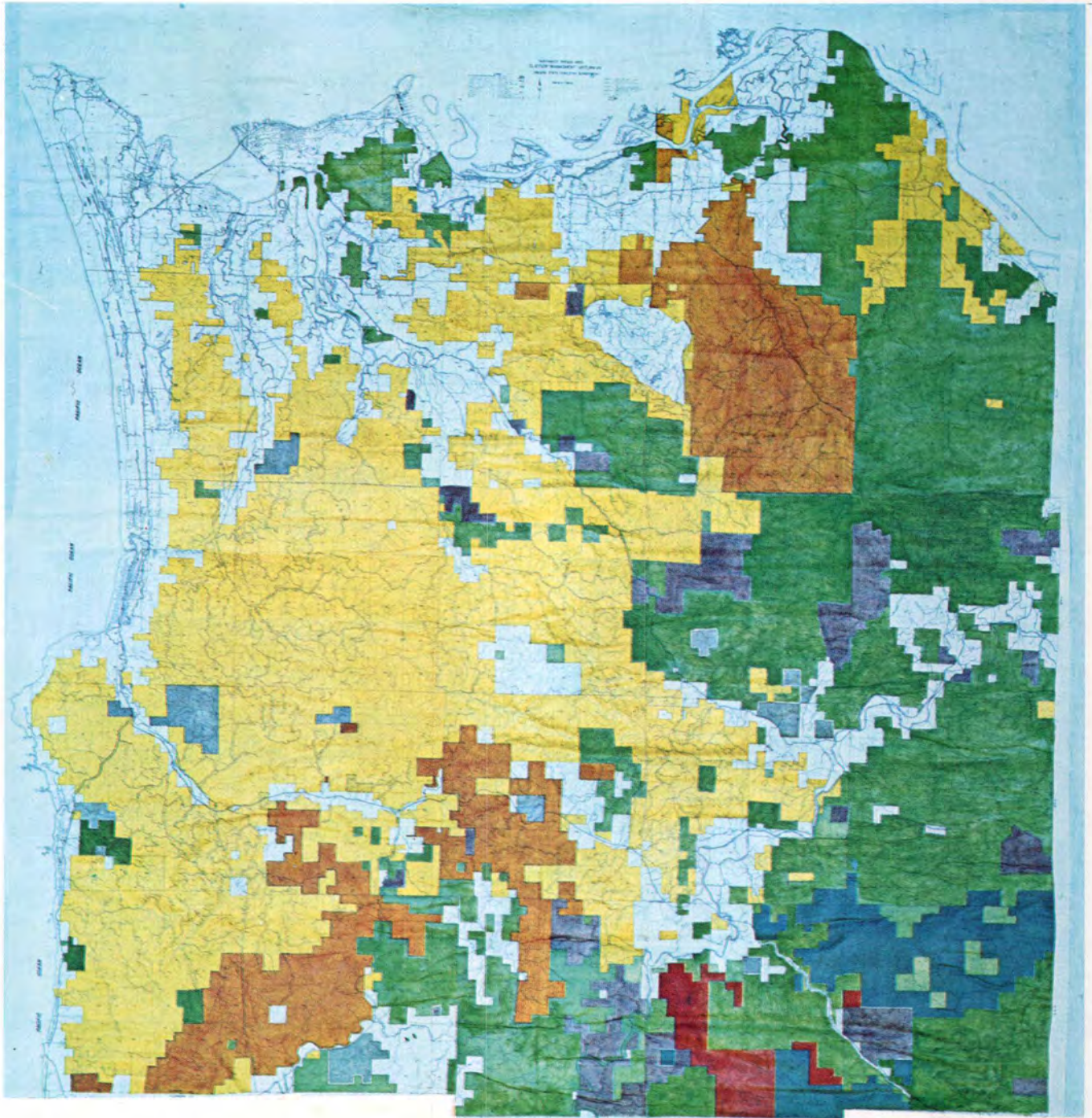
Understanding interest rates; the securing of loans with savings, insurance or securities at lower interest; and determining when borrowed money can return more than the interest are still a source of question for many people of both rural and urban families.

Real estate and commercial loans, for example, are simple interest. Installment loans are on a discount-interest basis and usually have mortality insurance. Simple interest is a rate of interest figured on the unpaid balance. Discount interest is determined on the dollar amount borrowed for length of time borrowed and repaid in equal monthly installments. Example: A \$500 loan at 8% discount interest for one year would be a total note of \$540 payable back in 12 payments of \$45. Paid in 12 equal monthly payments with simple interest of 8%, this same \$500 loan would earn only about \$20 interest.

Also, bank loans may be secured by stocks or savings accounts at preferred rates of interest over unsecured loans. Savings passbooks can be held by the bank as security on savings loans, and these savings continue to draw interest. Stocks are held on stock loans, and percentage of loan to value of stock is set by government. Government bonds may also be used to secure loans, but not Series E or H bonds.

Clatsop Forest Ownership

MAP BY OREGON STATE FORESTRY DEPARTMENT



The Clatsop land area of 515,000 acres is primarily in large forest ownerships totalling over 470,000 acres. Areas along the coastal strip, Columbia River plains, and the river valleys include the urban centers, suburban residences and farmlands. These areas are colorless on the above map and include the smaller forest ownerships of less than 5000 acres.

Colored areas represent the larger forest holdings that are, for the most part, under intensive management for sustained yield. These ownerships, the approximate acre-

ages and color designations are shown on the above map as follows:

Crown Zellerbach Corporation, 171,000 acres	Yellow
Oregon State Forestry Department, 147,000 acres	Green
Boise Cascade, 51,000 acres	Brown
Longview Fiber, 14,000 acres	Purple
International Paper, 13,000 acres	Dark blue
Ruth Realty, 5,000 acres	Red
Publishers Paper, 5,000 acres	Light blue

Real-estate loans that the banks make for a home 5 years or older are 75% of appraisal for a maximum of 20 years. On homes 5 years and under on prime property 80% for 25 years is allowed. Federal housing authority mortgages can be made for 97% of appraisal for 25 years. National veteran loans are the same as the federal housing loans except that in some cases 100% financing is possible. The Oregon veterans housing loan is available to Oregon veterans only and is made direct from agency funds at 4% interest.

The matter of discounts on housing loans was reviewed by the committee and is partially explained by the fact that the supply and demand for money works much the same as with other commodities. Competition for loan money increases interest rates and other costs for borrowing money. Discounting loans by paying the seller less in cash than the selling price agreed to by the buyer allows the lending agency additional income for making the loan.

Land Values Climb

Real-estate loans for the purchase of farmland, to be used as farmland, become increasingly difficult. Farmland values increase with the expectation of higher food prices in the future, pressures for open-space living, and the possibilities for higher use such as housing or industry.

Farm income from dairy and beef, in most cases, is not sufficient to meet the production expenses and land-purchase agreements necessary to buy a farm. Farm sales may result in expansion of established landowners adjoining the land; others are sold to new owners with off-farm income; and yet a few are financed as full-time farm operations with reasonable assurance of success from a good operator.

Farming Loans Tight

Some committeemen felt that banks could help farmers by extending livestock and equipment loans over a longer period. General attitudes of investors toward loaning to farm operators seems to vary from region to region. The example was used of the extensive financing of large poultry operations in the southeast United States, where a large market has developed for the automatic poultry feeders manufactured by the Lektro Corporation of Warrenton. Also, livestock producers in certain other parts of the United States are reported to finance breeding herds of beef animals more easily. Undoubtedly, production and marketing characteristics of one farming area compared to another contribute to such differences, and lenders might not choose to invest in farming if the risk is any greater than with various other lending opportunities.

Machinery-purchase loans from local banks are most commonly written for 36 months. Livestock-purchase loans are also generally on a three-year term. About 50 to 70% of appraised value is the usual guide for granting loans of this type.

Although commercial banks are keenly interested in high-quality real-estate loans, activity in farm mortgages is somewhat limited because of length of term needed by the purchaser. Bank policy on farm mortgages usually allows a maximum of 2/3 of the bank's appraised value of the property and a maximum term of 15 years.

Committeemen also generally agreed that even though farm loans seem most difficult to get when they are most needed, improved records and performance history would

help rural people obtain more use of the loan potential available to them.

Machinery Not in Full Use

Clatsop farmers are also faced with the inefficiency of owning more farm machinery than can be economically utilized. Forage-harvesting equipment, tractors, trucks, and field-working equipment necessary to large full-time operators are often also owned by the less-than-full-time farmer. Committeemen discussed the possibilities for a forage company that might manage sufficient acres for the necessary machinery to be efficient and the acreage many times more productive.

Credit Rating

Recognizing that a good credit rating is necessary to obtain operating capital from lending agencies and that most farming operations require the use of borrowed money, the committee was interested in the operation of the local credit bureau.

Clatsop Credit Bureau activities were reviewed for the committee. The credit bureau is a private organization, with each bureau a member of the Association of Credit Bureaus in the United States. A computerized service is coming soon through these bureaus that will make individual credit examinations very fast and complete among all western cities and perhaps eventually nationwide. This will aid greatly the sound use of credit and also deter the fast-growing, bad-debt roster and the phenomenal increase of bankruptcy.

Consumer credit from 1950 to 1960 rose 186% in the United States; at the same time bankruptcies rose 450%. Oregon is a leading state in rate of bankruptcies and has been from third to fifth place in the nation for several years. States vary considerably in bankruptcy proceedings, but almost all states have shown considerable increase. In the United States an increase from one bankruptcy per 2,000 people during the depression to one per 1,000 in 1955 and one in 438 by 1965 has taken place.

BANKRUPTCY FILING IN THE
UNITED STATES, 1948-64

Fiscal Year	Number Filed	Per Cent Yearly Change	Cumulative Filings	Filings per 100,000 Population	Cumulative Filings per 100,000 Population	Total Population
1948	18,510	+40.5	18,510	12.6	12.6	147,208,000
1949	26,021	+40.5	44,531	17.3	29.9	149,767,000
1950	33,392	+28.3	77,923	21.9	51.8	152,271,000
1951	35,193	+ 5.4	113,116	22.8	74.6	154,878,000
1952	34,873	- 0.9	147,989	22.2	96.8	157,553,000
1953	40,087	+15.0	188,076	25.0	121.8	160,184,000
1954	53,136	+32.2	241,212	32.5	154.3	163,026,000
1955	59,404	+11.8	300,616	35.8	190.1	165,931,000
1956	62,086	+ 4.5	362,702	36.7	226.8	168,903,000
1957	73,761	+18.8	436,463	42.9	269.7	171,984,000
1958	91,668	+24.3	528,131	52.4	332.1	174,882,000
1959	100,672	+ 9.8	628,803	56.6	378.7	177,830,000
1960	110,034	+ 9.3	738,837	60.8	439.5	180,676,000
1961	146,643	+33.3	885,480	79.7	519.2	183,742,000
1962	147,780	+ 0.8	1,033,260	80.0	508.2	186,591,000
1963	155,493	+ 5.2	1,188,753	81.1	679.3	187,979,000
1964	171,719	+10.4	1,360,472	89.8	769.1	192,072,000

Committee Recommendations

★ The credit bureaus have educational programs that should be aided and encouraged. A short course on the source of loan funds, use of money, interest rates, and establishment of credit could be of interest to consumers in general. Home economics programs sponsored by the Extension Service in family finances would be helpful to extending more credit information.

★ Opportunities for rural growth through new agricultural crops, processing firms, or marketing enterprises should be encouraged. The Clatsop Technical Action panel of USDA agency representatives, and other federal and state groups involved with rural development should keep alert to new projects that could benefit from loans through

Farmers Home Administration, Small Business Administration, and other federal assistance programs.

★ A committee representing business and consumer groups could review bankruptcy laws and services of local credit bureaus. The committee might also make recommendations regarding any public or legislative action to improve credit and bankruptcy problems.

Forestry Committee Report

Brief History

The major part of the land in Clatsop County is devoted to the growth of trees. Forest products are grown on approximately 473,000 of the county's 515,200 acres.

Most of this forest acreage is classed as commercial forest land and is under intensive management for timber production. In past years Clatsop forests were noted for their vast expanses of Douglas fir and other important softwood species, including hemlock and spruce. The old-growth Douglas-fir was harvested in a comparatively short span of years. Early hand, horse, and ox-team logging along the slopes of the Columbia and other navigable rivers gave way to steam donkeys and railroads which extended through much of the county between 1910 and 1925. Clatsop forests yielded 572 million board feet in 1926, the year of peak production.

Early explorations by the Scottish botanist, David Douglas, who sailed into the Columbia about 1823 and spent two years observing forest-plant species of the area, did much to spread the fame of the northwest forests and the tree that bears his name.

The logging operations and sawmills in the county were among the first in Oregon. Lumber produced in the several large sawmills along the Columbia River was primarily from Douglas-fir. County mills also turned out cedar for boats, shingles, shakes, and posts; hemlock for pulp and trim lumber, spruce for pulp and planes; and alder for furniture.

Lumber production followed much the same trend as log production until about 1945, when sawmill needs exceeded the county log supply. Mills designed for large old-growth logs were also finding it uneconomical to continue operation with fewer and smaller second-growth logs. The large lumber mills of Westport, Wauna, Bradwood, and Warrenton, still operating in 1950, had given way to a plywood mill, two stud mills, and a pulp and paper mill by 1968.

From the peak production of 1926, log production dropped sharply during the depression, increased again in the late 30's, and from 1942 declined to a minimum of 132 million board feet harvested in 1954. Since that time production has increased, however, and 250 million feet were harvested in 1966.

The amount of standing commercial timber in Clatsop County was estimated in 1913 for tax assessment purposes at 16 billion board feet. However, recognizing the demand for large accessible timber to meet the needs of logging methods, mills, and markets of that time, authorities estimate that the stand of 1913 would more likely have been 25 billion board feet by present standards.

In 1952, following the large scale harvests of the previous 40 years, an inventory of standing commercial timber showed 1.6 billion board feet of Douglas-fir and 3.9 billion feet of western hemlock. In addition to this, some 380 mil-

lion feet of Sitka spruce, 323 million feet of alder, and 198 million board feet of red cedar made up the bulk of the 6.6 billion board feet of standing commercial saw-timber reported to be in Clatsop County.

Ownership Changes

Ownership of the Clatsop forest lands changed strikingly during the few decades of harvest. Depression years on top of heavy investment in logging machinery and poor market conditions worked a financial hardship that encouraged cut-and-get-out methods. Owners of timber that could not be logged economically and owners who had no further use for logged land let thousands of acres revert to county ownership. By 1932 the county had acquired 100,000 acres of foreclosure lands.

Some of this foreclosure acreage included timber stands accessible by newly developed truck and tractor logging methods. County officials were anxious to keep the land on the tax rolls, and there were loggers willing to buy it only long enough to get the timber off. Concern for the county's economic survival and future brought citizens together in 1937 for a county-wide study of land use with cooperation of the Clatsop County government, the Oregon State College Extension Service, and local planning committees. Recommendations included conversion of then worthless logged-off lands to grazing purposes. It was felt livestock could return income much more quickly than new stands of timber. Some 240,000 acres of the county were considered suitable for this use, and an OSC experimental farm was started at Northrup Creek in 1937 to provide management guides.

About this time state forestry laws also proved important in facilitating purchase of lands for management by the state forestry department, with 75% of harvest value staying with the county. An experimental area under this program was started in the Hamlet area and became the forerunner of the present system.

World War II then brought new markets and new values to the second-growth stands and to the remaining old growth and salvage ever more accessible with modern equipment. Pressure to buy county timber was again heavy, but the commissioners were hesitant to sell timberlands for short-term gain without consideration for the future growth and tax base of forest lands. Consequently, by 1945 the county had turned over 90,000 acres to the state forestry department, which had purchased another 15,000 acres for inclusion in the long-term management project under the new county and state forestry program.

Also, by this time another major forest owner, Crown-Zellerbach Corporation, had taken advantage of the opportunity to acquire sizable acreages of hemlock and spruce stands along the coastal slopes as well as hundreds of logged-off acres of potentially high-yielding sites that would become important to their perpetual tree-farming



SEAFOOD — AGRICULTURE



RECREATION

Clatsop County, at the top of the Oregon Coast, has the scenic, sandy, accessible ocean beach along the west side, the Columbia River along the north, and the Nehalem and Necanicum Rivers on the east and south sides.

The ocean and waterways have influenced the historic settlement, and subsequent development of the transportation, fishing, forestry, agricultural and tourist industries.

The first U. S. settlement west of the Mississippi in 1811 was called Astoria for its fur-trading founder, John Jacob Astor. This followed the 1805 exploration and encampment of the Lewis & Clark expedition at Fort Clatsop.

Clatsop County's present healthy and rising economy is based on many resources. Historic places and land marks abound. Forests are now produced and harvested as systematically as crops of cane. Seafoods from the ocean and river support a large local industry. Shipping from the county's Port of Astoria generates payrolls and services. Agriculturalists produce such varied crops as mink, holly, cranberries, and forage crops that turn into meat and milk. New, modern industries are starting along the Columbia River. Visitors and residents alike use the parks and beaches, hunt, fish, and enjoy such special resources as the salmon runs at the mouth of the Columbia River.



WOOD PRODUCTS

INDUSTRY



WATER



operations. As early as 1920 Crown-Willamette, a predecessor of Crown-Zellerbach, was managing a large acreage on the basis of a permanent and growing pulpwood industry. Their foresters had replanted cut-over properties in

the Cannon Beach and Youngs River areas by 1920 that are now visible evidence of their early and continuing forest management.

PRESENT SITUATION

Major Owners in 1967

Private industrial-forest companies, including Crown-Zellerbach Corporaion, Boise Cascade, International Paper, Longview Fibre, Publishers Paper, Ruth Realty, and others own 42% of Clatsop forest lands.

Crown-Zellerbach is the largest owner in Clatsop County, with 171,000 acres, or 36% of the forested lands. Its operations are based on sustained-yield management and include new log-sorting areas on both land and water and the new multimillion-dollar pulp mill at Wauna.

The second major forest landowner is the state of Oregon forestry department, with 147,000 acres located for the most part in the eastern half of the county, where Douglas-fir predominates. Management of these acres represents maximum use of reforestation practices and sustained-yield planning. Some 67,000 acres were adequately stocked in 1948, when the total acreage under the program was 119,000 acres. Another 23,000 acres was in need of more complete stocking, and 29,000 acres needed both restocking and fire-hazard reduction by removal of snags and debris. Most of this work had been completed by 1967, and harvested acres are being replanted or seeded immediately after logging.

The third largest forest-land ownership is represented by small woodland owners, including some with over 1,000 acres, but for the most part 300 to 400 owners of much smaller tracts. These ownerships amount to 100,000 acres, and committeemen estimated that at least 50,000 acres are likely understocked and in need of brush control and other forest-management practices. It is this segment of the county forest lands that was of primary interest to the planning committee. The problems of marketing, taxation, and management on the smaller private ownerships are in need of attention to assure the maximum growth and economic returns known to be possible.

Economic Return

Clatsop forest lands presently yield 250 million board feet annually. A steady increase is expected as more of the reforested acres reach maturity and take their place in

the sustained-yield cycle. Ultimately the 473,000 forest acres might be expected to produce an average of 1,000 board feet per acre per year, making possible annual harvest of 450 to 500 million board feet.

Present harvests are used for pulpwood and chips, amounting to 40% of the total; logs for lumber, 35%; poles and piling, 15%; and hardwoods for furniture and pulp, 10%.

The economic impact of the forest industries on Clatsop incomes is estimated at \$35 million annually and is shown as follows:

Industries directly associated with forestry	Approximate value
such as logging contractors, road building contractors, and other construction contractors	\$22 million
Wood exports	8 million
Other transportations	2 million
Related goods and services	3 million

TOTAL \$35 million

Two significant aspects of the forest economy have been the expanded use and improvement of the port facilities due to log exports to Japan and the return of nearly one-half million dollars annually to the county from the county-state forest lands.

The 1967 export tonnage from the Port of Astoria was 1.1 million tons. Logs for Japan amounted to 957,113 tons. Lumber totaled 41,303 tons, and plywood 12,618 tons. Approximately 80% of the logs exported were from private lands, with 20% from federal lands in the Mount Hood area. About 60% of the logs from private lands were from Clatsop County forests. All of the lumber and plywood came from Clatsop mills, with an additional 52,000 tons of lumber milled in Westport and shipped out of that port.

Dollar returns from the sale of timber from state forestry department lands are particularly important as they represent a permanent and increasing annual income direct to Clatsop County. From 1944 through 1967 \$4.8 million has come to Clatsop County to be apportioned among school districts and certain other tax-supported functions as an offset to property taxes.

Small Woodland Owners

The situation of the small woodland owners as reviewed by the committee included three areas of concern: Markets, taxes, and improved forestry practices. As mentioned previously, small woodland owners together represent the third largest ownership of Clatsop forest lands.

The Clatsop Small Woodland Owners Association was formed in 1967 to help bring about improved forest production and marketing by education and demonstration. This group is a part of the Oregon Small Woodlands Association, benefiting from the experience of other county organizations interested in forestry and the educational assistance of Oregon State University Extension forestry specialists, extension agents, and professional foresters of the state and private groups in Clatsop.



Log Handling At the Crown Sorting Yard

The forestry committee reviewed the present marketing situation for woodland products, called attention to the various real-property tax plans affecting woodland owners, discussed forest improvement, listed problems and opportunities, and made some recommendations for projects or changes.

Small Woodland Products

Pulpwood. Mills in the Longview area and the Crown-Zellerbach pulp mill at Wauna provide markets for softwood and alder hardwood logs in minimum sizes of 4-inch tops and 8-foot lengths. Cost of hauling to the Longview mills has been too high in relation to price received to be a factor at present in Clatsop small woodland markets. However, demand is expected to increase, and along with the shorter haul to Wauna, to improve the pulpwood outlets. The use of chipping plants in the local area will also expand markets for small-sized logs for pulp. One chip truck hauls the equivalent of two to three loads of logs.

Poles. There is a strong demand and price for poles and piling at mills and treatment plants in the Portland and intermediate areas. Poles and piling are being harvested in some woodlot stands only 24 to 30 years old. There is also limited market for trolling poles for fishing boats. The market requires that these be at least 5 inches at the butt and 1½ inches at the top and 25 feet or more in length.

Saw logs. There is a market for saw logs at the local plywood mill, at stud mills, and for export. Alder saw logs for furniture are also in demand but must have a minimum diameter of 10 inches and a minimum length of 8 feet.

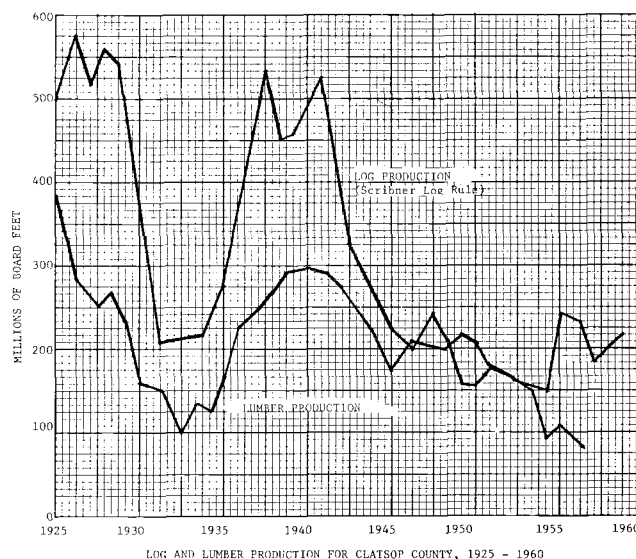
Christmas trees and forest greens. There is a market for Christmas trees of good quality. Plantings of shore pine and other species for Christmas trees are increasing. Forest greens, including ferns for decorative purposes, are among the many forest products of economic importance. Permits are required also for greenery harvesting. These and all permits for forest harvests must be obtained from the state forestry department with offices near Astoria.

Improving Small Woodlands

The committee discussed the importance of bringing more of the small ownerships of forest land into full production. The financial assistance for forestry-improvement practices that is provided by the United States Department of Agriculture's stabilization and conservation service was of particular interest. Also, forest landowners in Clatsop wishing to improve forest production could receive ideas and suggestions from one of the many professional foresters working in the area. The "Tree Farm" improvement program provides incentive for improved management by the woodland owner. It is sponsored nationally by the American Forest Products Industries of Washington, D. C.

U. S. D. A. Agricultural Stabilization and Conservation Service. This program provides up to 70% assistance for the costs of land preparation, tree planting, noncommercial thinning of established stands and stand improvement through brush control, tree limbing, construction of fire ponds, erosion control, etc. This applies particularly to the owners of small woodlands in keeping with the annual limitation of \$1,000 per cooperator of A. S. C. S. funds. Work under this program is first reviewed by the Oregon state farm forester in response to the owner's application.

West coast tree farm. Under this plan the owner wishing to improve woodland production makes application for the "Tree Farm" designation. To be accepted the owner would agree to maintain forest production, provide reasonable protection from fire, insects, disease, and excessive grazing, and report annually on progress and plans. Professional foresters with the Northwest Industrial Forestry Association will then assist with general information and an occasional visit to the area. The program gives recognition to good forest management and to the woodland owners who practice it.



Forest Taxation

Because of the long period of time required to produce a stand of trees and the threat of fire and pestilence, exceptions have been made in rates and methods of taxation in order to encourage forest ownership and sustained-yield management. The property tax methods for forest owners and their application are as follows:

Ad valorem taxes. This is an annually levied property tax which applies to the majority of timberland in Clatsop. It includes the tax levied on the land plus the tax levied on the value of trees growing on the land. However, under present statutes no value is placed on the growth until it is either 30 years old or 12 inches in diameter at breast height. Any commercial harvests not meeting these specifications are to be reported and subject to tax. Once the growth reaches the taxable age or size, it is assessed at 30% of its market value to allow for risk and time for maximum growth. Intermediate thinnings or terminal harvests are assessed at or near the full market value. Once it is clear cut, the total tax is again based on the bare land value only, and a new crop begins growth.

Forest fee and yield tax. This method was adopted to allow for risks in timber growth and to encourage ownership of nearly worthless logged-off lands that had become county owned through foreclosure. A per-acre rate of 5 cents was first charged annually, with a further tax of 12½% of stumpage value being charged at time of harvest. The acre rate is now 10 cents. Some 90,000 acres remain under this method of taxation. According to provisions of the state tax commission, forest owners may apply for this tax method, but in Clatsop County no land has come under this plan since the 1940's.

Western Oregon small woodland owners' optional tax. This was established in 1961 for small woodland owners with 1,000 acres or less. The purpose of this tax method is to encourage forestry practices and intensive cropping of forest products from Oregon's small woodland acres. Christmas trees and fence posts, for example, can be produced under this plan without concern for an annual tax on the products removed. To be eligible, acreage cannot have a crop of trees older than 60 years at the time of application. The new owner has only one year from date of purchase to apply for the tax. Application is made through the state forestry department and, if accepted, the acreage will then be assessed annually from a fixed value according to its productive capability. There are five land classes ranging from Class I, valued at \$80 per acre, to Class V at \$5 per acre.

Fire-protection tax. A move toward organized protection of Clatsop County forest land against the hazard of fire began in 1913 with formation of the Clatsop County Fire Patrol Association. A few years later Tillamook, Columbia, and Washington counties joined to form the Northwest Oregon Fire Patrol Association. This larger association was empowered by legislation to levy an assessment to meet expenses. The state of Oregon assisted the association in 1945 with the high costs caused by the Tillamook burn. The association provides primarily for fire control activities including prevention, presuppression and suppression. The per-acre assessment of forest lands within the Northwest Oregon area in 1967 was 16.5 cents per acre. Forest owners pay this amount on all land, including brush land and stump land. The federal government also appropriates money to this fund under the Clark-McNary Act.

Small woodland owners and logging operators have a measure of liability in connection with fire control. They have a joint responsibility for the prevention and control of fires during logging operations until the land is released from this responsibility by the state forestry department. The fire-control district is administered by an area director, a district warden, and an inspector.

Forest product harvest tax. This tax or fee provides for research funds expended on behalf of the Oregon forest industry. Harvests of less than 25,000 board feet are not subject to this tax that currently amounts to 4 cents per thousand.

Other tax provisions. As of the 1967 legislature, owners of forest lands adjacent to acres under such higher uses as housing, industry, or recreation may apply annually to the assessor to be left under the land values established for forestry. When the forest landowner changes from forestry to a higher use, the land is subject to the additional tax between forestry and the higher use value for the past five-year period plus the future years under the higher use.

Problems

The forestry committee and foresters from the state and private organizations assisting the committee with information identified a few problems and opportunities in connection with county-wide development of the forest resource.

★ Utilization of forest products from woodland acres is changing as demands increase and new processes develop. Improvement in harvesting equipment and methods for smaller trees and thinnings is a continual need.

★ There is need for more forest workers trained in the

various manual and technical skills of the industry. The value of workers so trained has been well demonstrated by the graduates of the two-year forest technology course offered at the Clatsop Community College.

★ Use of the Clatsop forest lands by the public is being increasingly provided for in both state and private forests. Park facilities, hunting and fishing privileges, road tours, use of roads by horseback riders, and use by four-wheel drive and cycle clubs are some of the present examples of public interest in forest lands. Additional county and state park developments, attraction to the rivers, lakes, and streams of the county, and the increasing number of people moving into the area bring increasing pressure on the multiple-use aspects of this resource.

★ Clatsop County industrial and population growth will require additional diversion of forest lands into power line right-of-ways that presently occupy some 15,000 acres of forest land in Oregon. With power demands nearly doubling every 10 years, some planning for right-of-way needs and location might be considered on behalf of the forest industry.

★ Small woodland ownerships in Clatsop County total an estimated 100,000 acres, 25,000 acres of which are in need of brush control, replanting, and stand improvement. Some organized efforts are being made to interest growers in an active program such as that of the Clatsop Small Woodland Owners' Association and the further improvement of school forestry tour demonstration area at the OSU John Jacob Astor Experiment Station.

★ Harvesting and marketing of small woodland products often becomes a problem to the landowner. Committeemen believed that contract harvesting by someone in the logging business could have distinct advantages over the owner's doing his own work to cut expense. Important to all woodland owners is a knowledge of property boundaries and the approximate volume of merchantable timber being considered for harvest. Markets may be buying certain small woodland products but only at certain times of the year and in certain volumes. Without definite market arrangements being made before harvest, merchantable logs could be wasted.

★ The Japanese log-export market has brought a multi-million dollar business to the port of Astoria. Prices paid for export logs have been above the prices previously paid locally. Though some sawmill operators are finding higher log prices a disadvantage, forest owners and logging operators on the committee reported that the export business has done a great deal to improve their income and bring new enthusiasm to woodland ownership and management.

Recommendations

The committee made the following recommendations for possible improvement in the growth and use of our Clatsop forest resources:

★ It is recommended that the Clatsop Small Woodland Owners Association be supported through the membership of small woodland owners of the county. Also, the OSU Extension agents and specialists along with public and private foresters should continue to assist this organization in their plans for periodic meetings, tours, demonstrations, and market development.

★ It is recommended that the county forestry committee, which organized and conducts the annual school forestry tour, continue in their effort to establish demonstrations

in thinning at the forest-demonstration area of the Astor Experiment Station.

★ The county forestry committee, including several foresters from both Crown-Zellerbach and the state forestry department, and, if desired, in cooperation with the county parks and recreation committee, might want to give consideration to a county-wide plan for increasing multiple use of the Clatsop forests, including use for public utilities such as power lines and highways.

★ Directors of the two-year forest technology course at the Clatsop Community College are to be commended. Graduates of this program are being employed and increasingly sought after by the northwest forest industry. Continued support of the college forestry course through employment of the graduates will benefit the forest industry and encourage added enrollments.

★ It is recommended that the County Extension Service assist landowners and foresters in compiling a list of forest owners where brush control, tree planting, or other stand improvement is needed. This would provide further contact with landowners toward development of the forest resource and promotion of forest-improvement practices eligible for as much as 70% cost assistance under the ASCS program.

★ Committeemen directly involved in logging and woodland ownership recommended that restrictions on export of state-owned timber to Japan until it has been processed beyond the form of a log should be lifted. The commit-

tee pointed out that the amount of state-land logs being kept out of export is only a very small percentage of the total export from the state and Clatsop County. However, since Clatsop has a large amount of state-owned timber, income to Clatsop is unnecessarily lower, because state logs sell for as much as \$10 per thousand less simply because they cannot be exported. With 75% of the income from sale of state timber going for county tax offset, any reduction in log price is a loss to taxpayers.

★ It was recommended that to the extent possible under sound management and maximum income from public auction, the state forestry department sell timber in blocks or volumes small enough not to discourage or prevent purchase by well-established though comparatively small local logging firms.

★ Cooperation in tansy ragwort weed control was encouraged by foresters and logging operators who find individual plants or infestations of this weed in their working areas. It is not a threat to timberlands but spreads along the roads and waterways to provide larger and larger areas of growth and seed source. It can reach great economical importance when eradication from farmlands becomes nearly impossible because of the surrounding seed source. Marginal and nontillable lands become infested where control practices are more expensive than the land justifies. Control is possible only through expenditure of large and repeated sums of public funds.

Family Life Committee Report

Social and technological changes provide increasing numbers of challenges and opportunities for today's families. The responsibilities of families and communities is greater than ever before to adjust to constructive changes, guard against threats, and to strengthen and ensure stability within the family.

Clatsop families, in general, are "well rooted" in their communities and have not been faced with extreme social changes.

Trends in county population in Clatsop County have shown a decline during the last 10 years, although presently a definite upward trend is noted. The drop in population during the past 10 years has been due mainly to loss of military activities, closure of outdated sawmills, the Pillsbury Flour Mill, certain fishing business, and retail and other services. The increase has been due, in turn, to the Crown pulp mill at Wauna, the Job Corps, increased port activities, and the related services.

Population Growth Clatsop County

		State	Total
<i>Population</i>	1950	30,776	1,521,341
	1960	27,380	1,768,687
	1963	23,434	1,856,190
	1965	27,700	1,972,150

Astoria is the largest town in the county, with a 1965 population of 10,500, followed by Seaside with 4,000, and Warrenton with 1,800. Other incorporated towns and their population are Gearhart, 730; Hammond, 563; and Cannon Beach, 520.

The 1960 census showed that 7,522 families resided in Clatsop County. A total of 1,529 families, 20.3%, had

an income under \$3,000 a year, compared with 17% on a statewide basis. A little over 11% of the total families had an income of \$10,000 or more.

A representative group of Clatsop County families was given an opportunity, through a questionnaire, to express concerns and point out needs related to the family and county. Major areas of concern were family stability, housing, education, employment, and needs of senior citizens. These concerns were used as guidelines in the study of the Family Life Committee.

Family Stability

A look at some of the problems of Clatsop County families points out the importance of educational programs to help parents and children keep pace with today's world, adjust to the changing values of society, and cope with many of the resulting problems.

Divorce Rate

Clatsop County has a high divorce rate. Over the last five years, the percentage of divorces for marriages ranged from 49% to 71% with an average ratio of 58 divorces to every 100 marriages. This is slightly higher than the Oregon divorce rate and considerably higher than Clatsop's neighboring counties, Tillamook and Columbia.

Early Marriages

In Clatsop County during the past five years, 34% of the brides and 9% of the grooms were 19 years of age or younger. As recently as 1966 in Clatsop 38% of the brides and 12% of the grooms were 19 years of age or

less. In 1960, nationwide, 48.5% of the brides and 16.1% of the grooms were under 20 years of age. In Oregon, 58% of the brides and 19% of the grooms were 19 years of age or younger.

The number of early marriages in Clatsop County is below the state and national average but is gradually increasing. Family life authorities tell us couples involved in early marriage are more likely to have their marriage end in divorce and they are less likely to have a satisfying marriage if it does endure. Early marriages are sometimes the result of premarital pregnancy. From September 1966 through May 1967, 12 girls dropped out of Clatsop schools as a result of premarital pregnancy, and half of these were from 12 to 15 years of age.

The committee also thinks another factor complicating the success of early marriages is the lack of training or experience in home management and the maturity to cope with parenthood.

Mental Health

The Clatsop County Mental Health Clinic offers service in areas of child guidance, alcohol information and treatment, follow-up work with patients released from state hospitals, adult psychiatric care, counseling to families of the retarded, marital counseling, and court conciliation.

If one or both parties in a divorce suit request assistance, conciliation services are available. In 30 referrals from the conciliation court to the mental health clinic, 50% of the couples made an effort at reconciliation.

Alcoholism

Clatsop County has the highest per-capita consumption of alcohol in the state. This assumption is based on the amount of tax money returned to the county from the sale of distilled spirits. Family stability may be threatened and social problems created by the excessive use of alcohol. Alcoholics Anonymous Association and the Mental Health Clinic are both providing assistance to families and individuals faced with this problem.

Juvenile Problems

The young people within our families, as well as those older youth without parental help, also need help to cope with emotional problems and to make social and personal adjustments. During 1962-63, 11 Clatsop County boys were placed in juvenile training schools. During the past year, 134 children and teenagers under 18 years of age were given counseling assistance at the Mental Health Clinic.

Child Care Facilities

Children and infants in Clatsop County removed from their homes are usually cared for temporarily in one of the local hospitals. An insufficient number of foster homes are available for care of children to age 17. There is no place for emergency care or custody of teenagers except for the juvenile facilities in the Astoria and county jails.

Family Life Education

Education in family life has not been given forceful attention in the county. Some sprinkling of teaching family life is done through churches and the formal educational system.

The Cooperative Extension Service has many excellent bulletins available for use. There are also facilities available in Cooperative Extension to organize and conduct family life workshops and classes.

Housing

During most of the past 10 years very little investment housing for either rental or sale has been constructed. The 1960 census pointed out that 25.5% of the existing 12,392 housing units were unsound. Because housing development appeared to increase at about the same rate as the population growth, there are few family-type dwellings for sale or rent.

Presently there is a step-up in housing construction in the Svensen-Knappa-Westport communities due to new industrial development in that area, and additional housing is under construction and also in the planning stages in the Astoria area. Two companies have constructed condominiums in the Gearhart area and plans are underway for additional construction of this type of housing in other beach communities.

Efforts are being made to bring new industries into the county, and housing construction will need to keep pace with population growth, although a lag may exist that causes inconvenience to many newcomers.

New families are arriving at a much greater rate than anticipated by population estimates, and the Welcome Wagon service reports several hundred new families were called on during 1967. Many families are buying mobile homes, and mobile housing areas are being developed for this type of housing. New homes, trailer parks, duplex units, and the own-your-own apartment plan of the condominiums have all added to the home supply the past few years. New rural housing and subdivisions are developing along Highway 30 as a result of the Wauna Mill and along the coastal strip with the certainty of an aluminum plant in Warrenton, and ever-increasing oceanfront living.

Communities may have some opportunity now to plan for attractive development and adequate utilities, but usually the ideas and abilities of the investors govern developments. Requirements for building standards, sewage systems, and water supplies may pose limitations in some areas, but space for housing is still available over much of Clatsop County.

Farmers Home Administration loans are available for families in rural areas and communities up to 5,500 population. These loans are available for families of low and moderate-income levels and senior citizens unable to obtain conventional loans.

Education

About 63% of the property taxes levied in Clatsop County are requested and approved for support of the schools through each local school district, the Intermediate Educational District, and Clatsop Community College. The IED Board arranges for services to local school districts such as special testing, speech therapy, and training teacher aids as well as furnishing visual-aids material. They also administer the distribution of some \$400,000 annually from the county's share of state timber sales that is used to offset certain school taxes.

A program is planned for 1968 to provide vocational

and technical education through the Clatsop IED, and eventually as a joint project with the Tillamook intermediate educational district.

There are no public kindergartens, although there are four private kindergartens in Astoria and additional ones in Seaside and Warrenton. The "Head Start" project was started in the summer of 1966 and met with considerable success. Some 125 youngsters from low-income families were better prepared for regular schooling by this federally sponsored program.

It was the general feeling of committeemen and women that additional funding for education must be found either through increase of the state's basic school support, overhauling the property-tax structure, or through changes in the school support system.

Employment

The principal industries in Clatsop County are fishing, lumbering, agriculture, recreation, and tourism. In 1963 the labor force totaled 9,650, with 7.7% unemployed. The seasonal aspect of some of the employment causes fluctuation in family income. There is a steady increase of employment opportunities in service jobs, but because of the requirements for specialized training, local applicants to fill vacancies are not always available. Clatsop Community College has moved ahead rapidly in providing vocational and technical training programs whose graduates are easily placed in such fields as auto mechanics, electronics, marine technology, livestock technology, forest technology, secretarial arts, and several other fields. The college is also accredited in its two-year undergraduate program.

Senior Citizens

Clatsop County is unique in the significant percentage of older people in the population. According to a recent study census, Clatsop County ranked highest in the state in the percentage of people 65 years of age or older. A total of 3,782 persons or 15.65% of the population was in this age bracket, compared with 10.7% on a statewide basis. The projection for Oregon's elderly population indicates that the percentage of Clatsop County people 65 and older will increase to 17.22% in 1970; 18.98% in 1975, and 21.26% in 1980. Many senior citizens are moving into the county and spending retirement years in the beach communities.

Finding suitable housing for senior citizens on a fixed or limited income is a problem, and services or facilities particularly important to the older persons include health and medical care, transportation, employment, and community and recreational opportunities.

Senior citizens, as a large part of the county population, have stayed or come to the county in retirement years probably because of climate and convenience factors that they desire. They have also brought income to the county as evidenced by some \$440,000 in monthly social security payments.

Problems and Opportunities

Early marriages in Clatsop County are gradually increasing.

One of the major responsibilities of education is to equip individuals of all ages to become effective mem-

bers in the family and in community life. One of the goals of family-life education in the elementary and public schools should be to strengthen the ties between the individual and the home. Young people need to be provided with family-life education that presents a realistic picture of marriage and prepares them for marriage and parenthood.

There is inadequate professional family counseling in the county.

Some young people as well as adults have emotional problems which hinder social adjustment.

At the present time there is a need for additional suitable childcare facilities for children removed from their homes in cases of child neglect and abandonment.

There is need for facilities to use in caring for teenagers while waiting for placement in juvenile institutions.

Housing to meet the needs and income levels of the newly arriving industry workers and professional and service people will need to be built. There also needs to be special consideration given to the availability of housing for low-income families and senior citizens, according to the committee.

Educational problems discussed by the committee centered around the difficult balance of the educational dollar between needs for general high school education and the vocational-technical fields. In addition to continued emphasis on more vocational training, the committee favored kindergarten programs for more schools.

Employment opportunities would also be increased through the continued and expanded job-training programs such as the Job Corps, Neighborhood Youth Corps, Work-Study and Manpower Training; and programs of the Oregon State System of Higher Education through the general extension division and the Cooperative Extension Service.

There is need to provide gainful employment for senior citizens. Their abilities and possible contributions to the development of the community could be further utilized through art centers and town beautification. Some communities are developing historic sites and beauty spots through the national "Green Thumb" program whereby retired men of low income are paid for their work on certain civic projects.

Recommendations

The family life committee listed the following recommendations for specific projects or studies to improve family stability, housing, job training, and senior-citizens activities:

★ A family-life committee should continue to function under the direction of the county Extension Service.

★ A steering committee should be organized to plan for expanded family counseling services to meet the growing demand.

★ A study should be made of present active family-counseling services in Oregon that involve the members of the bar, ministerial, and medical associations at a county and community level.

★ Attorneys, ministers, and medical doctors, and the Mental Health Clinic staff should be assisted and encouraged to strengthen the family counseling services.

★ A study should be made of existing family-life education in Clatsop schools and, for comparison, in some other Oregon school districts.

- ★ Family-life education should be further incorporated into the curriculum from 1st through 12th grades.
- ★ Educational programs should be developed through the OSU Extension Service to assist young women of early marriages in home-management methods, consumer competence, family health and child guidance. Family life education should be taught to adults through the Cooperative Extension Service.
- ★ Further effort should be made to expose needful families to the present services of the Mental Health Clinic, County Health Department, Welfare assistance, and the program of the County Extension Service.
- ★ Housing development to meet the needs of low-income families and the senior citizens should be reviewed in light of low-interest loans for nonprofit housing projects available from federal-loan sources.
- ★ Vocational and technical education programs for non-

college-bound students, currently underway and being planned, need the understanding and support of Clatsop citizens.

- ★ Job training and retraining for people of all ages is taking on new dimensions through the Community College, Job Corps, high-school programs, federal-assistance programs, the Extension Service, private industry, and other organizations. Public understanding and support is needed to bring eligible people to these programs.
- ★ Public-school kindergartens should be established as soon as possible to provide this experience and training to all youngsters.
- ★ Efforts of the County Extension staff to develop senior-citizen activities should be continued and the present availability of facilities and services needed by this valuable segment of our county population should be studied.

Youth Committee Report

In September, 1967, youth in grades 1 through 12 in the schools of the county made up about 22.5 per cent of the total county population. Following are the school enrollments for Clatsop County in September, 1967.

Enrollment										
1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	
560	437	458	522	515	499	476	452	506	527	
			11th	12th	Special					
			499	427	44					
Total: 5,922										

There are 5 public high schools, 13 public elementary schools, and 2 junior high schools in the county as follows:
High schools. Jewell, Seaside, Warrenton, Astoria, and Knappa.

Junior high schools. Astor Junior High School, Astoria; Fort Stevens Junior High School, Warrenton.

Elementary schools. Captain Robert Gray and Central schools, Astoria; Hilda Lahti School, Knappa Primary, Knappa Grade School in Knappa; Lewis and Clark District No. 5; Westport; Jewell; Broadway and Central Schools, Seaside; Olney; Gearhart; Warrenton; Cannon Beach.

Other schools. Star of the Sea High School with an enrollment of 80 students, and Star of the Sea Elementary School with an enrollment of 214 students. Also Pleasant Valley School, Seventh Day Adventist, with an enrollment of 6. A new junior high school is being constructed in Astoria.

The opening of the Tongue Point Job Corps accounted for a slight increase in Astoria school enrollment. The Crown Zellerbach plant in Wauna was responsible for an increase in Knappa school enrollment but had less effect on the Westport school, since few mill employees live in the immediate area surrounding the mill. Future industrial development in the Astoria-Warrenton area is anticipated, with a rather large increase in school enrollment expected.

Following are statistics on public-school district valuation and indebtedness, excluding Knappa district:

Assessed valuation	Amount of debt	Debt as a per cent
(1966-67)	(1966-67)	of valuation
\$39,854,000	\$3,170,000	7.9

Clatsop County Community College was established in 1959, being located at that time in Astoria High School. College students attended late afternoon and evening ses-

sions. At the present time the college is located in the old Astoria High School facilities. It has been completely remodeled and new buildings have been erected. The college offers college-level courses for students working toward a degree. Credits toward a degree earned at Clatsop College are accepted in other colleges and universities in the State System of Higher Education and many others outside the state system. In addition to college-level courses, there are technical, vocational, and agricultural courses offered for those not working toward a degree. Evening courses are also offered through Clatsop College.

Clatsop Community College makes it possible for the youth of the county to continue their education after they leave high school and meets a real need of local youth. At present the enrollment at Clatsop College is as follows:

Day, full-time students	625
Part-time students	80
* Evening students	700
	1,405

* Includes students enrolled in evening courses through community-college district.

There are 76 full-time members of faculty and administration at the college and 63 part-time instructors.

The Tongue Point Job Corps, while not serving youth of the county directly, is a factor in the youth picture of Clatsop County. The Office of Economic Opportunity established the Job Corps at Tongue Point, a former naval base located east of Astoria at Tongue Point on the Columbia River. The Job Corps received its first trainees in February 1965. From February 1965 to January 1967 the Job Corps offered training for young men. In the spring of 1967 the facility was changed from a male training center to a young women's training institution. The youth served are economically disadvantaged. The Job Corps trainees visit Astoria, Seaside, and Warrenton and come in contact with local youth. Generally, the relationships have been good, but some problems have developed. There is a continued need for the community to work on solving these problems.

The youth of the county are served by a variety of extra-curricular activities offered by the schools and by Clatsop College. These activities offer some social, athletic, educational, and cultural opportunities. In addition, there are a variety of organizations serving youth. Following is

a list of some of the youth organizations and the number of youth they served as of 1967:

Organization	No. of groups	Ages served	No. enrolled (youth)
Boy Scouts	30	8-18	750
Girl Scouts	65	8-16	509
F. F. A.	1		
4-H Clubs	103	9-18	690
Y. M. C. A.	47	(all ages incl. adults)	505
(1967 Y.M.C.A. membership was 1585 including all ages)			
Rainbow Girls, Astoria	1	12-20	75
Rainbow Girls, Seaside	1	12-20	80
Theta Rho, Warrenton	1	12-18	50
Jobs Daughters, Astoria	1	12-21 (or marriage)	40

Three areas of concern to the youth of the county are recreation, employment, and education. These situations are herewith outlined briefly, problems are identified, and recommendations are made.

Recreation

What to do for recreation? This is a matter of concern for youth. Where can we go? What can we do? These are questions asked frequently by youth. Some youth become involved in youth groups and activities and this takes care of their leisure time. Other youth, for various reasons, fail to derive satisfaction from these activities and present a problem to the community.

Some of the recreational facilities available to Clatsop County youth are as follows: a public outdoor swimming pool at Tapiola Park in Astoria open during the summer months; the small Y.M.C.A. pool in Astoria; bowling alleys in Astoria and Seaside; a skating rink in Astoria, open two nights a week; and in summer the Little League, Babe Ruth League, and American Legion baseball available to county youth. In Seaside there is "Kids, Inc."

In both Astoria and Seaside there are playground and picnic facilities available to youth. Such facilities are lacking or inadequate in almost all of the outlying areas.

The Olney teen-age club is open to all youth in Olney who desire to participate and conform to good-conduct standards.

A city recreation program for youth was in operation in Astoria during the 1967 fall season.

The Pypo Club in Seaside caters to teenagers, with adults available for counsel.

Youth organizations listed above and others provide some opportunity for recreation for youth. There are many opportunities in the area for hunting, fishing, boating, water skiing, surf boarding, hiking, and camping. There are not many opportunities for social recreation for teenagers. According to youth interviewed, they do not like to have too much adult supervision. They do not object to counsel and advice from adults, however.

Problems

The youth committee identified as a problem a lack of youth recreational opportunities that satisfy the needs of young people. Transportation is necessary for youth from the outlying areas to get in to Astoria or Seaside to attend school functions and those of other youth organizations. More community-oriented activities, as the Olney teenage group, would benefit youth from outlying areas.

The number of young people under age 21 arrested for illegal possession of alcoholic beverages has increased

in the past few years at a faster rate than the population. There has also been an increase in arrests for possession of narcotics. When youth complain that there is nothing to do, it is obvious that they do not care to do the things available to them. Young people seem to be maturing faster than they were even a few years ago. Group activities that were a satisfying source of recreation to older youth a few years ago are considered by many youth to be too juvenile.

It was the opinion of the committee that skilled volunteer and professional youth workers to help youth with their recreational planning were needed in all parts of Clatsop County. Part of the problem is acquiring and developing this leadership. Leadership for youth who are disadvantaged economically and socially is especially needed.

Recommendations

To improve recreational facilities for youth the committee makes the following recommendations:

★ A committee with countywide representation be appointed by the County Commission to study the recreational needs of youth. This committee should make thorough periodic surveys of recreational opportunities for youth and evaluate its findings in light of the needs.

★ The committee should concern itself especially with recreational opportunities for disadvantaged youth, keeping in mind that often they are not accepted by conventional youth groups and that if left to their own devices will form groups of their own and get into trouble.

★ The Extension Service should organize and conduct leadership training meetings. Special effort should be made to invite to these meetings adults interested in advising and counseling with youth. The purpose of these leadership training meetings would be to interest and encourage adults to assume leadership roles in assisting young people develop wholesome recreational activities. Again, special emphasis should be placed on leadership techniques in working with disadvantaged youth.

★ The Extension Service also should organize leadership meetings for youth group members and leaders in the field of recreation leadership. Purpose of these training meetings would be to improve the quality of recreation programs offered by youth groups.

★ The proposed committee should investigate thoroughly the possibility of using public schools to better advantage for recreational activities for both adults and youth. If the schools could be used and there is a need the committee should make recommendations for getting this program into operation.

Education

Generally, Clatsop County schools are well run and provide good preparation for youth planning to go to college. Since many youth are not college bound, they are in need of training of a vocational nature that would help them to work toward gainful employment upon completion of their high school work or point them toward further training in order to acquire a skill that they can use to earn a living. There is a need for more encouragement, stimulation, and guidance for non-college-bound youth.

Since less than half of the students enrolled in high schools will go to college, there is a need for vocational and technical instruction of students who will be added to the ranks of the labor force upon completion of their

high school work. It was the feeling of the committee that many youth who drop out of school before graduation would be encouraged to remain in school and complete their requirements for graduation if they were being trained in a vocation or a trade that they enjoyed and could excel in.

It is obvious that teachers generally are not equipped or trained in this field. There is a general inadequacy among teachers as to what type of training and education is required to qualify the student upon graduation for a job in business and industry.

The youth on the committee felt that today's youth need to have more responsibility entrusted to them. Among these responsibilities was some voice in the evaluation of faculty members. It was the opinion of the youth that some of the instructors who have stimulated their thinking and who had been good teachers had not stayed, while other teachers whom they felt were poor instructors remain. There is no student representation at school-board meetings.

Some of the youthful members of the committee commented that there was not enough reference material provided that would help them in addition to the textbook. They also expressed the need for more time to do special reading, particularly on current events during school time. The committee felt that many students had not received education at home in sex and that this caused some youth to get into difficulties.

The committee asked the students represented on the committee to gather evidence that their opinions were shared by others in the student body. Students in three high schools were interviewed and the results reported to the committee. There was a degree of unanimity of thought among the students interviewed that the situation as presented by the students existed.

EMPLOYMENT

Job Opportunities

The labor picture in Clatsop County affects the youth of the county in several ways. Full employment means more jobs for youth. With a high rate of unemployment, some jobs normally filled by youth are taken over by adults. During the past decade several events had a marked effect on employment in the county. In 1961 Tongue Point Naval Station closed and eliminated about 300 civilian employee jobs. This reduced the number of job opportunities. In addition, military personnel and their families moved away from Clatsop County. This reduced the purchasing power within the county and had an adverse effect on transportation, trade, finance, insurance, real estate, and service industries.

A second event that improved the employment and economic picture was the building of the Astoria-Megler bridge which began in 1964. A third event contributing to improved economic conditions was the building of the Crown-Zellerbach paper mill in Wauna. The fourth event improving the economic picture was the opening of the Tongue Point Job Corps Center. Following is a tabulation showing some facts about the county labor force:

	1960	1962	1964	1966
Civilian labor force	9,940	8,980	9,540	11,010
Employment	9,190	8,350	8,580	10,300
Unemployment	750	620	960	710
Percent of Labor force unemployed	7.5	6.9	10.1	6.4

Recommendations

The committee recommends that:

★ School administrators take steps to develop a program of vocational and technical training to prepare youth for employment in business and industry upon completion of their high-school courses. Some suggestions for working on this were as follows:

—Trained persons be employed to confer with business and industrial leaders and learn their needs and requirements for employees. Training of students be geared to meet these needs.

—Training courses for teachers be instituted to train them how to work with students in preparing them for employment in business and industry.

★ Clatsop College offer training for youth who have dropped out of school to enable them to complete their G.E.D. work. Since many youth who have not completed high school visit the state employment office, strong encouragement should be given by O.S.E.S. to these youth to take the G.E.D. course at Clatsop College to better equip them to meet the requirements of today's business and industry.

★ That school administrators evaluate subject matter material with the objective of providing as much outside reading as possible.

★ That students occasionally be represented at school-board meetings as observers and to offer their opinions in the evaluation of personnel and to report on how they feel the learning process could be improved.

★ A program of sex education to be instituted as a regular part of the curriculum. This to be developed by the school administrators in cooperation with the County Health Department.

Figures are not available to show the number of youth under 21 employed. The number of those under 25 is available by occupations for 1966. Following is a tabulation showing the number of persons under 25 years of age employed in various types of occupations:

Technical	34	Sales	64	Semi-skilled	232
Managerial	9	Service	289	Unskilled	184
Clerical	194	Skilled	37		
TOTAL					1,118

This total of 1,118 young people under 25 in the labor force represents 10.9% of the total number of those employed. Included in this 10.9% are youth, students employed in summer jobs, and high-school dropouts who have found employment. Since the number of high-school graduates in Clatsop County in 1966 was about 400 and about 150 entered college or pursued vocational or technical-training courses, some 100 were faced with the prospect of finding a job and were added to the labor force in the county. It is estimated that fewer people retired or died and were removed from the labor force than came on the labor market, and as a result, competition for available jobs became greater. This was complicated by increased mechanization in some industries which eliminates the number of men needed. Following is a tabulation showing current employment by job types, the number of employed under 25, and forecasts for 1968 and 1970. It should be kept in mind that the forecast could be changed considerably should Northwest Aluminum Corporation locate in

Clatsop County. From past experiences, over half of the job openings provided would be filled by people moving into the area, rather than by those currently unemployed in the county.

It is increasingly important that noncollege-bound youth get better training in high school to equip them for jobs in business and industry. It is also important that youth stay in school and avail themselves of as much training as possible. There is job and vocational counseling available at the Oregon State Employment Service, in high school, and at Clatsop Community College. It is evident that these services are not being used as much as they could be. The number of unemployed youths indicates that we have a problem in youth-employment opportunities.

Occupation	Current total	Forecasts		
		Under 25	1968	1970
Professional	884	75	881	880
Technical	167	34	141	141
Managerial	471	9	435	435
Clerical	1,008	194	1,014	1,053
Sales	443	64	459	461
Service	1,290	289	1,308	1,344
Skilled	1,172	37	961	978
Semiskilled	1,507	232	1,581	1,583
Unskilled	1,378	184	1,290	1,269
TOTAL	8,320	1,118	8,070	8,140

Following is a tabulation showing major hiring requirements by occupational group.

Occupation	Minimum training required (as %)							Minimum years experience (as %)					
	New hires	none	High school	Bus. school	Appren- tice	Some college	College degree	0	1	2	3	4	5+
Professional	94	3	5	4	9	2	77	65	7	8	5	1	14
Technical	99	2	34	18	5	16	25	47	8	35	1	4	5
Managerial	66	9	44	12	3	8	24	7	8	15	9	4	57
Clerical	95	10	65	22		1	2	62	15	12	5	2	4
Sales	95	15	77	1	1	1	5	62	17	11	6	1	3
Service	98	77	19	3		1		70	16	9	2	1	2
Skilled	87	22	30	6	42			26	12	19	14	11	18
Semiskilled	85	55	43	1	1			26	40	17	10	1	6
Unskilled	93	91	9					84	12	3	1		

Almost all youth in high school like to earn money to provide for their needs. Those planning to go to college look ahead to the future, and many need jobs to earn money for college. Those in college need summer jobs to earn money for college expenses. Youth under 18 generally are not legally accepted in many types of employment. As a result there has been a feeling of discouragement on the part of some of the youth unable to find summer and part-time employment.

In 1967 a youth-employment opportunity center was started through the Extension Service, the County Fair Board, and the county commissioners. An office was opened in the fair building and staffed with two Neighborhood Youth Corps employees. People with jobs for youth were encouraged to list their jobs with the youth employment service. Youth who wanted jobs were invited to register for jobs. Jobs included baby-sitting, conducting birthday parties, lawn and garden work, painting, haying, store work, and a variety of others.

Neighborhood Youth Corps Work Study Program

As a part of the president's program to combat poverty and to develop the nation's manpower, since 1965 disadvantaged youth between the ages of 16 and 21 years were given the opportunity to work on public projects and to learn as they worked. Funds for this program came from the Office of Economic Opportunity. Oregon State University had a contract with the O.E.O. for the employment of youth whose families were in the low-income range on public projects. The Extension Service started the program in Clatsop County in 1965, employing a boy and girl to work in the County Extension Office. By 1967 about 20 youths were employed on the in-school program, with several high-school dropouts also being employed. Hourly wage has been \$1.25. Some of the youth on the program

have found other jobs on the basis of N.Y.C. experience. Others have quit for various reasons. Some have stayed with the program for a year or more.

Out-of-school enrollees have been provided opportunity to work as well as to continue schooling. Obtaining a general education degree (G.E.D.) was also being made possible in cooperation with the Clatsop College and High School principal. Generally, the Neighborhood Youth Corps has been beneficial for the disadvantaged youth of the county.

Under the work-study program, college students from families of limited income are eligible to work on public projects, during the school year and also during the summer. A number of students from Clatsop College have worked on this program, and students from other colleges and universities have been employed during the summer under the program.



Summer Youth Workers Build County Parks

County Work Program

About five years ago the County Commissioners in cooperation with the County Extension Service and school officials established a county work program for junior-high-school-age boys, ages 15 through 17. Twenty boys selected by school officials were put to work under a supervisor clearing county land and doing maintenance work on county parks. They were paid \$5. a day and \$8 per day starting second summer. Much good work was accomplished by this program both for the youth and for the county.

Problems

- ★ Lack of preparation of youth to enter the labor market. Part of this results from a lack of training in business and technical fields available to high-school students.
- ★ A general shortage of employment opportunities for youth in full-time, part-time, and summer jobs.
- ★ An increasing number of low-income youth who lack the motivation to stay in school and who are not equipped to enter the labor market.
- ★ Failure of many youths to avail themselves of the counseling available to them at the State Employment Office and through their schools.

Recommendations

- ★ As recommended in the section of this report dealing

with education, more courses need to be developed through the school systems to train youth who will not be going to college to qualify for employment in business and industry. The schools need to find out what these requirements are and base their training on these findings. Teachers need to be trained to work with noncollege-bound youth.

- ★ Youth need to begin to think about careers at an early age. Counseling facilities in the schools and at the Oregon State Employment Office need to be used to the best possible advantage.
- ★ More training needs to be given youth in making job applications. What employers are looking for, job requirements, and how to find a job should be a part of this training. This could be a cooperative venture with the schools, Oregon State Employment Service, and the Extension Service taking the lead.
- ★ Youth should stay in school until graduation and get all of the education and training possible.
- ★ The youth employment service should be continued and expanded. The county commissioners should employ someone on a part time basis to supervise the program.
- ★ The county work program should be continued.
- ★ The Neighborhood Youth Corps and Work-Study Program should be continued to assist economically disadvantaged youth.

Livestock Committee Report

Grazing animals are particularly important to the Clatsop agricultural economy as the chief means of using the forage produced on some 15,000 acres of farm grasslands. Beef cattle make up the major portion of the livestock on Clatsop farms, with beef cows exceeding dairy cows for the first time since the last census.

Livestock on Clatsop Farms
(U. S. agricultural census data)

	1950	1955	1960	1965
Milk cows	3,629	3,308	2,728	2,006
(farms reporting)			(258)	(159)
Beef cows	1,038	2,027	1,614	3,734
(farms reporting)			(101)	(226)
Sheep and lambs	1,318	1,098	765	575
Hogs and pigs	593	604	646	420

Cattle raised for meat, including the sale of dairy cows and calves for this purpose, return a gross of over \$500,000 annually to Clatsop farmers. Sheep and hogs add over \$20,000 to this sum.

Beef Crop

At present, beef producers in Clatsop are gaining in reputation for the crop of quality weaned calves weighing 400-500 pounds and ready for the feedlot markets in October and November of each year. This crop amounts to about 1,500 head and is finding favor among feedlot operators as far away as the Midwest. There is an increasing feedlot business in California, where 260,000 head (37%) of Oregon's calf crop was sold in 1965. A total of 50% of Oregon's feeders are going out of state and this market is also shared by Clatsop producers.

The increase of beef animals on Clatsop farms represents the need for keeping some kind of grazing live-

stock on the cropland pastures. Families wishing to stay on farms and prepared to work off the farm for the major portion of their income find beef most suitable. Only a few ranchers have the 200 or more head of beef cows necessary for a full-time economic unit.

United States Beef Markets

Competition for placing feeder cattle in United States feedlots is keen. Midwestern feedlots are supplied by the north, central, eastern, and plains states, totaling 2½ times more calves than produced in all 11 western states. Also, midwestern feed grains and fed beef are gaining an increasing share of the expanding Pacific coast meat market.

Americans are eating more beef and less pork and lamb, and Pacific coast residents eat 120 pounds of beef per capita annually as compared to 97.8 nationally. Imports of beef, both processed and as live feeder cattle, contribute to United States supplies. Canada and Mexico accounted for imports of over 1 million head in 1966. New Zealand and Australia account for 60% of the nearly 1 million pounds of beef and veal products imported in the United States annually.

Feedlot cattle have increased rapidly, and over 11 million head were reported from 32 states as of June 1967.

Cattle feeding in Oregon is expected to grow and may continue to be the major market for Clatsop ranchers' "weaner" calves, but both Oregon and local producers will probably face increased competition from outside sources. Lamb and mutton imports totaled 15 million and 60 million pounds respectively in 1966, coming mostly from Australia and New Zealand. It should also be mentioned that United States exports of animals and animal products amount to \$450 million annually. Also, more ex-

port opportunity exists for enterprising west-coast packers as, for example, in the Japanese market, where consumers pay \$5 per pound for choice, sliced sukiyaki beef.

Clatsop Marketing

"Country buyers" provide the major outlet for Clatsop feeders. Both feedlot operators from the inland areas and auction-market representatives contact Clatsop ranchers during the early fall to arrange for purchase of this "weaner" calf crop.

Ranchers have had to make special provisions for weighing and assembling feeders, as the buyers usually arrange for hauling through trucking contractors requiring fast loading at 120 head per load. Some Clatsop livestock is also marketed directly through farm and custom slaughter and through the one meat packing plant.

Although the "cow-calf" operation is the major beef enterprise, there is some opportunity for wintering weaner calves and selling them the following fall as long-yearling feeders and occasionally as slaughter animals. Economical utilization of spring and summer grass growth is also possible, sometimes, by buying cattle in the spring and selling them in the fall. The success of this enterprise depends largely on the cost of animals being less per pound than the selling price.

Sheep and Wool

Sheep numbers in Clatsop have declined in recent years to slightly over 550 head. This compares to over 1,300 in 1950. Sheep production is profitable where labor requirements can be met for lambing, shearing, foot care, fencing, feeding, pest control, and other practices necessary for good sheep management. Sheep, especially farm flocks, continue to be a good supplement to other livestock or crop operations. However, labor requirements, fluctuating lamb prices, the recently poor wool market, and the added annoyance of loss to coyotes, dogs, and bears probably account for present low numbers. Sheep continue to be a good 4-H project, however, and are on many farms for this purpose.

Sheep breeds used include mainly Romney ewes and Hampshire or Suffolk rams. This takes advantage of the Romney's ability to withstand coastal weather conditions, and crossing them with rams which produce more meaty lambs.

Hog Production

One or two fairly small commercial hog operations have been successful the past several years by using waste foods from restaurants. Other producers dependent on commercial feeds for raising pigs to market size succeed during brief periods of high pork prices and produce less during times of unfavorable prices. Weaner pigs to supply local demand are usually purchased outside of the county but may also be available locally.

Livestock Production Problems

The need to produce more units at less cost is constantly before livestock producers. Prices are based on national and to some extent on international supply and demand. Local producers therefore depend mostly on increased cattle numbers, improvements in facilities, and ani-

mal quality for added income—though the hope for better prices continues strong.

Opportunities for disease control, herd improvement, forage production, forage utilization, and marketing all pose major problems at times for most producers.

Livestock Pests and Diseases

Long seasonal use of Clatsop pastures by grazing livestock complicate the control of such pests as intestinal worms and cattle grubs. Cattle can be wormed periodically and cleared of grubs and lice by standard treatments that are well proven and inexpensive.

In 1967 face flies were a problem on cattle for the first time, but they already have become a pest requiring general fly control and sanitation. The use of a back and face-rubbing device where cattle can treat themselves is also recommended.

Disease difficulties are varied, and though great strides have been made in control of brucellosis and tuberculosis, other diseases now add to the losses sustained by ranchers.

Because Clatsop is a certified brucellosis-free county, cattle are being tested indirectly only through blood samples at slaughtering plants and ring tests for dairy animals. Both of these methods pick up suspect herds indirectly, and then herd tests for bangs disease are made by state or county veterinarians. Some calves are vaccinated at the expense of the rancher, but only if requested, as in the case of beef and dairy producers who send cattle into California.

Since several major cattle diseases are related to nutrition, increased emphasis is being placed on disease prevention through adequate feeding.

Milk fever in dairy cattle and grass tetany in beef cattle are examples of diseases often related to poor nutrition. If symptoms are detected soon enough, shots of calcium magnesium sulfate can be given. Breeding difficulties are also often associated with malnutrition.

Scours among calves and shipping fever in cattle under stress are other diseases. Most scours can be controlled with improved calving conditions, and shots for shipping fever are a frequent practice, which should become more common.

The appearance of black leg in animals under two years, although not great, is scattered over much of this county. Loss to this disease is characterized by the short time in which animals stop feeding and die. Malignant edema, related to black leg and troublesome to all ages, has also been diagnosed in several instances. Control in both cases is by inexpensive vaccine available to those whose herds have been exposed.

Foot rot of sheep and cattle adds further to the problem of production increases. Sheep foot rot must be treated by trimming the feet, rotating the pasture, and providing disinfectant and foot baths. Cattle foot rot, a different organism, is more easily treated by adding organic iodine to the grain ration, and diligent foot trimming.

Herd Improvement

The use of artificial breeding of beef cows is available but very difficult to put into practice. OSU research indicates that the time may come when most of the cows in a herd can be brought into a nearly common heat period for breeding.

Production testing to evaluate cows and bulls in terms of the calves they produce is being carried out on an increasing number of farms in Oregon and in the United States. In Clatsop County this testing is being done on some farms. Identification of cows and calves is vital to this program, and freeze-branding may become an improved means of placing identification marks on the animals. Weighing calves at weaning time is also a part of the herd improvement project.



Beef Improvement Aided by Freeze Branding

Forage Production - Utilization

Improved forage stands of high-yielding grasses and legumes for maximum livestock-carrying capacity is the basis of forage improvement. Attention to soil needs of lime and major plant foods, particularly nitrogen, phosphorus, and potassium, is also an important part of forage improvement, as are drainage ways, field shaping, fencing, and irrigation.

Utilization of the forage produced then becomes another source of problems or of opportunities for providing the maximum amount of digestible nutrients to the herd. Equipment for harvesting and buildings for storage of both low-moisture silage and hay are near musts, yet present costs and labor expenses limit improvement of many farms.

Weed and Predator Control

Both of these problems have been of particular concern to the livestock producers of Clatsop County. Livestock men and others, in counsel with the county board of commissioners, adopted weed-control laws covering the control of tansy ragwort and gorse. Canada thistle was the other weed of major concern but was already too widespread and entrenched to be reduced by practical means other than by individual landowners.

Tansy ragwort has continued to spread over the county even though a weed inspector has been at work from June through September and many landowners have become familiar with the weed through information and control programs.

Predators, including dogs, have been a continual but sporadic problem of sheep producers. The county is on a bounty system for coyotes, bobcats, and moles, with county funds and bounties flexible according to the magnitude

of complaints and reports of kills submitted. Dog damages are paid for at current rates for sheep or fowl destroyed, but proof of damage and identification rests largely with the livestock or poultry owner.

Marketing Problems

Clatsop ranchers need further grouping of salable animals during the peak selling periods of September and October when "weaner" calves are sold.

Incorporation of the county livestock association to deal with cooperative marketing opportunities has been recently accomplished. An attempt by the directors of the association, with encouragement of the livestock planning committee, to purchase and operate a weighing and loading yard where producers can congregate their separate lots and make final sales to the buyers was partially accomplished. Two ranchers made such an installation themselves, and it was in operation for the 1967 fall calf crop. It is available to ranchers at 10c per 100 pounds of cattle weighed. If successful, this installation will lead to more interest on the part of the association for improved marketing.

Recommendations

Livestock committee members listed the following items for continued effort and projects for the improvement of the livestock industry.

- ★ Predatory-animal control is believed necessary to encourage sheep production and reduce occasional new-born calf losses as well as the loss of game birds and animals. It is recommended that the county board of commissioners be supported in a bounty system and other control measures.

- ★ Control of noxious weeds through the county weed-control law, including employment of a county weed inspector, should be continued subject to program review each spring with the county commissioners and livestock association representatives. Display of a map in the courthouse showing major areas and size of infestations of tansy ragwort and gorse was also recommended. The committee further supported any state-wide effort or legislation that would place weed-control work under the responsibility of the State Department of Agriculture and their regulating forces.

- ★ To further general herd health, the committee recommends holding more demonstrational field meetings on common disease-control practices; handling of animals for castrating and dehorning; foot care in sheep; and preview of minor and major nutrient requirements for herd health.

- ★ Marketing of weaner calves through country buyers necessitates weighing, sorting, and loading of calves at some collective point where buyers and sellers can deal and large groups of cattle can be loaded easily and quickly. The committee recommends that producers work together through the county livestock association to use present facilities and develop additional ones as needed to provide better marketing.

- ★ Production testing of beef cattle and sheep has proven a valuable aid to management and animal selection on some Clatsop farms and many Oregon farms. The project needs suggestions on how to build usable farm scales for individual weaning weights and better ways of numbering or marking cows and calves to make identification more visible and permanent.

★ Farm management analysis through computer systems is an available service to ranchers and should be tried on more farms.

★ Forage production and utilization practices are constantly being improved, and the committee recommends that producers support forage research and attend the an-

nual field days of the John Jacob Astor Experiment Station, of OSU, located on the outskirts of Astoria. Continued research on artificial insemination should be encouraged at the Astor Station, with the hope that this practice will improve beef-production efficiency on many Clatsop County farms.

Mink Production Committee Report

Production of mink fur pelts has returned over \$1½ million gross annually to Clatsop agriculture the past several years, exceeding income from all other commodities.

In January 1967 about 24,000 female mink were being kept in the herds of 34 Clatsop mink ranchers, an average of 700 per ranch. This is the largest number of breeding females ever maintained on Clatsop farms and represents a fairly steady increase since the start of the industry in the '30s.

Fish and its availability for mink feed has been the major reason for location of the industry in Clatsop. Nearly 5 million pounds of whole fish and fillet carcasses are purchased annually from the Oregon fishery, benefiting both the rancher and the fisherman. The Oregon Fur Producers Cooperative in Astoria deals with mink ranchers over all of Oregon, purchasing annually nearly 8 million pounds of fish and fish products for which they pay the fishing industry some \$315,000. In 1966 this producer-owned cooperative did an annual gross business of nearly \$1½ million in mink feed and ranch supplies, and employed some 20 people. However, the volume of business done in 1967 had decreased to approximately \$1 million as a result of the price drop for pelts. This cooperative serves a few mink ranches in Washington also. Clatsop ranchers represent a total investment of \$2,140,000. In 1966 they realized a record income of \$1.9 million from the 1965 production of 100,000 pelts. Ranchers employ many workers in the pelt-fleshing operation and during seasons of breeding and whelping.

In addition to the 34 ranchers and their families, about 60 part-time employees are usually hired for the month of November to help with mink fleshing. The Clatsop ranches also support about 15 or 20 full-time hired workers and about 15 more during the summer period for general ranch work.

Improved disease-control practices and extensive studies with diet and fur abnormalities conducted at the OSU mink farm and other centers have further aided the total ranch efficiency.

INDUSTRY PROBLEMS

The National Market

In 1966 mink-fur buyers at the main auction houses of Seattle, Minneapolis, and New York chose from 8 million United States produced pelts and from the nearly 6 million pelts imported from Scandinavia, Canada, Poland, East Germany, Japan, the United Kingdom, the Netherlands, and a few others. In 1956 this supply was 3.5 million United States pelts and 1.6 million imported pelts. United States consumption has also risen from 6.2 million pelts in 1956 to about 13 million in 1966. The national average price per pelt of the 1965 crop was \$19.48, down from the 1959 price and up from \$16.40 in 1961.

A difficult year occurred in 1966, with an in-

Mechanical feed carts, step-saving shed design, and centralized pelt fleshing are other improvements that have been expanded.

State and National Production

Oregon ranks sixth among the 15 states producing mink. Wisconsin, Minnesota, Utah, Washington, and Ohio are the top five. Nationally, 3,700 ranches produced over 7½ million pelts in 1965. In 1966 Oregon had 160 ranches totalling over 100,000 females. Clatsop production totals are ahead of those of other Oregon counties: Tillamook, Columbia, Marion, Multnomah, and Benton, in that order.

Ranch Efficiency

A close margin between costs for feed, labor, marketing, interest, depreciation, taxes and management, and the income from pelts forces farm efficiency. Nationally, total production costs averaged \$18.50 per pelt for the 1965 crop compared with an average national selling price of \$19.48 per pelt. Over 30% of United States mink ranchers have gone out of business since 1960, mostly as a result of this cost-price squeeze and increasing supplies of imported pelts which help to bring fur prices down.

Feed efficiency has greatly improved in the past five years for Clatsop and for many Oregon ranchers who subscribed to the cooperative's production and distribution of ready-to-eat feed. This is delivered daily to approximately 70% of the ranchers. Ranchers purchasing the mixed feed save the expense of grinding and mixing equipment and farm freezers. Operators of ranches of 1,000 mink or more are in a stronger position to store ingredients and mix their own feed than units with 500 females or less. The average number of mink kept by one rancher 10 years ago has increased steadily from 350 to about 500. Attention to breeding and selection of females has also pushed whelping averages close to four kits per female.

Increased number of pelts running into increased sales of foreign pelts, a depressed luxury market, and a carry-over of pelts in the garment industry. The 1966 crop was still not completely sold, and the prices were off one-third when the 1967 pelting season opened.

Problems Of Clatsop Ranchers

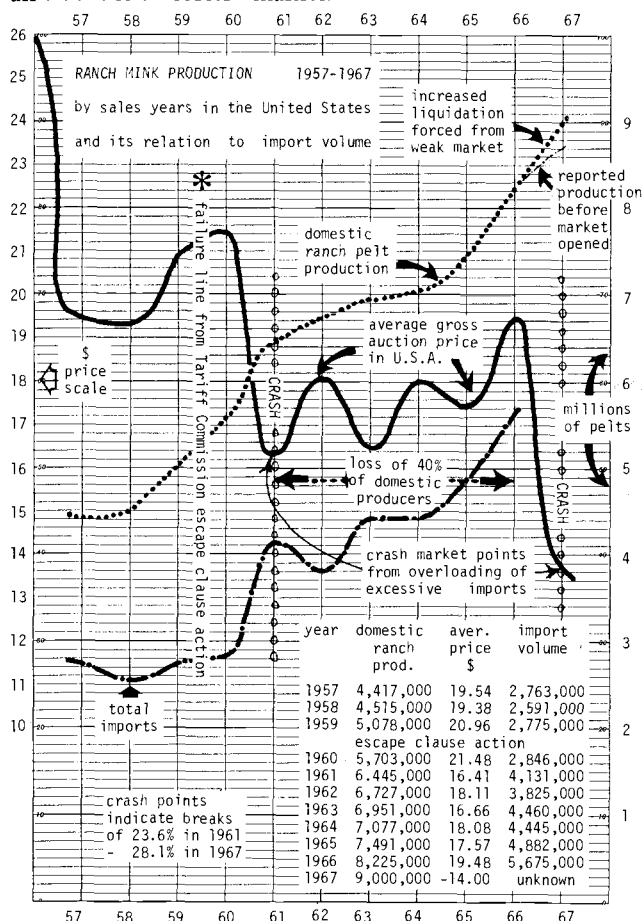
Clatsop ranchers, along with those of the nation, were tightening their belts, in many cases reducing their herds, and executing an "Operation Survival" to curtail imports, increase sales, and work toward less costly feed. Clatsop ranchers assisted the local fishermen in appealing for national protection of our ocean fishery. They also organized

a strong congressional appeal for limitations on pelt imports beyond the 40% level.

Fish products from ocean fishery to provide the usual 60% of the mink diet were being curtailed by a sluggish domestic fish market (also due largely to an import increase) and an extreme drop in perch fishery because of Russian activity off United States' Pacific shores.

Scandinavian production in 1966 not only equaled United States production for the first time, but was auctioned ahead of the United States sales. A large new auction house in Copenhagen also held a grand opening ahead of United States sales. Prices at these sales were well below those of the previous year, and for many United States ranchers below the cost of production.

Also, a carry-over of pelts in the hands of buyers and garment manufacturers, and some buyer hesitation caused by new tanning techniques affecting pelt coloration all added to a "softer" market.



Reduction of Cage Sizes

Remodeling and construction of mink sheds and cages to accommodate faster mechanical feeding have been undertaken by some ranchers. Committeemen reported that shed sizes of 24 feet to 26 feet in width by 200 to 250 feet in length are housing 500 to 700 mink. Cages are being made smaller, with 15 inches to 20 inches in both width and height, by 18 inches in depth. One rancher reported success with a 10-inch-wide cage for pelters and 2-inch-wide divider between cages. Cage houses are usually laid out four rows of pens wide with two alleys 40 inches wide. In addition to cages, ranchers need a good-sized fur-

ring shed. Cages are constructed locally in groups of about five cages each. After the first few years of use, these need reglazing to prevent rust stain on pelts. Cost for reglazing has increased to \$1.25 each for cages in multiple or single units. This cost encourages the ranchers to look for more economical methods for rust-proofing the cages.

Public Understanding

General awareness of the mink industry's relationship to the fishing business and the local economy has been strengthened through tours, talks, and articles. Man-made noises such as blasting and local low-flying aircraft have been mostly stopped by public appreciation of the "whelping" season in April and May. However, sonic-boom explosions from distantly based aircraft was thought the cause of losses on several ranches in 1967. Under such stress females destroy their young, both born and, in some cases, unborn. The understanding of both the public and of ranchers is also needed concerning the complexity of national and world markets which without some control, would see the loss of this business to Clatsop ranchers. Awareness of the industry's needs for financing and semiskilled labor are also vital to the success of the mink business. Financing is also needed by the auction houses, pelt dealers, and garment manufacturers as they work toward the end product of this luxury market.

Aid From Research

The Oregon State University mink research center continues to be a great aid to the industry. Current research includes several diet rations under study for greater feed economy and improved pelt quality. Abnormalities such as wet belly, fur greying, red hip, and fur chewing are also studied in relationship to feed and heredity. Light control as it relates to fur color is also being studied along with research into the possible influences of food on color.

Research at OSU has come close to perfecting high-grain, dry-type rations that could reduce feed costs and streamline feeding practices. However, liver ailments associated with dry feed and slightly reduced pelt quality slowed adoption of these rations.

Local ranchers and others in Oregon serve on the research advisory committee and through the Oregon State Fur Breeders Association contribute to the OSU mink research program.

Pelt Color

Production of the "right" pelt shade is an ever-increasing problem for the rancher. Production of high-quality mutation mink of various color phases has become common practice on most United States and Scandinavian ranches. Being able to have a good supply of a shade that is in demand by the furriers but in short supply on the ranches is as unusual as with other commodities.

The standard dark mink have held to about one-third of the pelts produced by Clatsop ranchers. Standard dark mink had been increasing nationally from about 12% of total pelts in 1957 to 26% in 1965. Since production of most color phases responds normally to supply and demand trends, the 1966-67 price and sale difficulty may be due in part to good supplies of dark pelts.

The mutation color phases include the pastels, pale

brown, sapphire, gunmetal, platinum, violet and winter blue types, lavender hope, pearl, and white mink. The price of pelts of these various color phases, other than violets, has been tending lower since 1956. However, at present the pastels and blue type of mink make up about one-third each, along with the darks, for the Clatsop ranchers.



Beautiful Fur Color and Quality Are Bred Into Clatsop Mink

The dark mink have increased in number since 1956, and the violet types have increased from two-thirds of 1% in 1956 to 2½% in 1965, the pearl from 2% to 11%, and the white mink from 1.58% to 2.82%. Others have become fewer in number.

Producing quality pelts depends, too, on expert attention to feed requirements and various dietary deficiencies.

A wide variety of research has been conducted at different university centers. Directing the areas of research is the well-organized Mink Farmers Research Foundation, supported by a charge of 1% on all pelts sold by United States producers.

Recommendations

★ Committeemen recommend the continued support of research in feed rations, fur abnormalities, and fur color. They also encouraged close contact between the Oregon Research Advisory Committee and the National Mink Research Foundation in order to better implement work on problems of Clatsop ranchers. Ranchers are also encouraged to attend the mink field day held each year at the OSU mink ranch.

★ A need exists for less expensive galvanizing of used cages. Ranchers recommend determining feasibility of having light-weight trailers to more efficiently haul cages to the metropolitan cities where cost is least.

★ The committee recommends holding a few meetings of the producers together with bank or other farm-loan representatives to further improve mink-ranch loan procedures. Also, since 40% of the ranchers in the United States went out of business between 1960 and 1965, such meetings could help develop guidelines for newcomers or those wanting advance information.

★ Continuation of educational meetings and tours with the Chamber of Commerce, service clubs, and others should be arranged to convey information about mink farming with emphasis on its relationship to the seafood industry.

★ Continued contact with all airway users and others liable to cause loud noises about the mink farms during May whelping should be encouraged.

Dairy Committee Report

Clatsop dairy farming dates to the introduction of "Spanish" cattle broke to milking on a Clatsop Plains farm in 1847. Dairy cows became the "backbone" of Clatsop

agriculture as the most efficient means of converting the major crop, grass, into milk, meat, and dollars. Milk cow numbers in Clatsop reached a peak in about 1945.

Clatsop County Dairy Trends (Based on U. S. agriculture census data)

Year	No. of milk cows	Farms reporting	Millions lbs. whole milk sold	Farms reporting milk sold	Cream sales only	Farms with Cream sales	Value of dairy prod. sales
1940	4,090	549	14.1	279	127,437 lb.	96	\$525,000
1945	4,342	712	17.9	314	49,809 lb.	85	\$723,455
1950	3,629	712	16.9	275	35,456 lb.	66	\$836,905
1955	3,308	494	15.5	197	76,875 lb.	37	\$778,447
1960	2,728	258	18.1	125	8,135 lb.	30	\$826,010
1965	2,006	159	15.4	85	2,083 lb.	6	\$750,000

Oregon and U. S. Cow Numbers Also Down

Oregon cow herd (2 years old and over)		U. S. cow herd (2 years old and over)	
1946	253,000 head	1946	26,521,000
1966	140,000 head	1966	16,607,000

Decline of dairy cow numbers since about 1950 in Clatsop has been due to depressed prices, increased competition from other areas, retirement of older dairymen, and the lack of young men willing to replace them. Another factor is the difficulty of purchasing a starting interest in a dairy farm by young people wanting to dairy. Also, if the debt of purchasing a farm, herd, and equipment is

incurred, the income from the average production is not sufficient to amortize the debt.

Milk production has continued in excess of what could be sold at a profit to all dairymen. Using 1947 to 1949 as a base index period of 100, Oregon dairymen's costs were 129 in 1965 and increased another 4.7% in 1966. Prices received by dairymen stood at 90.5% of the base period in 1966, and only since the beginning of 1967 has the farm price for milk increased to an index of 104.4. This amounts to a 15% increase in milk prices paid to farmers from 1966 to 1967. Nationally the increase has been 11%. This recent shift to the plus side checked the

decrease of cows and milk production, and United States production was up slightly as 1967 began. However, mid-1967 showed a 1.6% drop in the national milk pail from 1966. Total milk production in the United States reached a peak in 1964 — 127 billion pounds; then it dropped to 125 billion in 1965.

Nationally, the number of milk cows decreased from 26.5 million in 1946 to 16.6 million in 1966, while average production per cow changed from 4,886 pounds to

8,080 pounds reflecting the pressure on efficiency that came with increasing costs for dairy supplies and labor in the face of decreasing prices to dairymen for their products.

Average Production Per Cow Clatsop DHIA

1950— 7,767 lbs. whole milk	1950—374 lbs. milk fat
1956— 8,600 lbs whole milk	1956—395 lbs. milk fat
1966—11,288 lbs. whole milk	1966—454 lbs. milk fat

PROBLEMS OF DAIRYING

Marketing Trends

By mid-1966 the United States Department of Agriculture had increased support prices, and surplus had all but disappeared from commodity credit holdings. It was expected that high beef prices encouraging culling of dairy herds, the increased market for high-producing dairy cows abroad, and a steady increase of population would bring general improvement to the dairy industry. However, imports of butter-sugar mixtures, used in ice cream, Colby cheese, and processed cheddar cheeses increased so sharply in 1966 and early 1967 that United States Commodity Credit Corporation stock again rose. Imports were limited to 1 billion pounds annually by congressional order in 1967. Based on milk equivalent, this compared to imports of nearly 3 billion pounds in 1966 and 4.3 billion in the first half of 1967.

Consolidation

In 1946 the Clatsop fluid-milk-processing plants included the Lower Columbia Cooperative, Larson, Sunflower, Dahlia, Ostman, Heino, and a few others. By 1967 sales and mergers had continued to reduce this number of dairy distributors to one. Larson Dairy sold out to the dairy cooperative in 1960, and in 1967 mergers were climaxed with the consolidation of the Lower Columbia Cooperative Dairy with the major Portland farmer-owned cooperative, Mayflower Farms.

Local marketing includes the sale of some 1½ million pounds of milk through four producer-distributors in addition to the nearly 10 million pounds of Clatsop Grade A milk delivered to the cooperative in 1966.

Producer-distributors in Clatsop County in 1967 included the Heino, Burkhart, Kraft, and Seppa dairies.

Clatsop dairymen are included in the Portland market area No. 1 under the Oregon Milk Stabilization Act of 1963. This producer-supported law sets producer quotas on the Grade A market and determines minimum dealer buying prices. Complicating its administration has been out-of-state milk not under the law except through the voluntary cooperation of out-of-state producers.

The stabilization act has been generally helpful to the total Oregon milk-marketing climate, and further efficiencies in milk transportation and reduced processing costs resulting from the Mayflower-farms consolidation are also expected. However, Clatsop dairymen have not benefited proportionately because of their having to share with the entire Portland pool the excellent market provided by summer beach residents and tourists.

Alternatives to Dairying

Dairying is still the preferred farm enterprise for

more than 20 Clatsop fulltime farmers. With the advantages of spring, summer, and fall pasture and forage production for silage and hay, there will continue to be a substantial dairy industry.

Alternative farm use is limited to livestock and related products if forage acres are to be utilized. Off-the-farm opportunities for employment in logging, longshoring, sawmills, a paper mill, fishing, and construction provide good jobs for many young men from rural areas. A few stay on the farms and some succeed. The same off-farm jobs support many of our part-time farmers, who find the combination of a steady job and some farming more practical and satisfying.

Increasing Production

The problem of low or negative returns to dairymen for labor, management, and interest in their investment forces surviving dairymen to look for lower production costs and higher production per cow. Higher prices paid to dairymen for milk are also a necessary part of survival of the dairy industry, but lowering of production costs is the more tangible means to increased income for dairymen.

Dairy herd size and production per cow continue to increase, and these factors are more and more a part of the dairies that continue to operate. Dairy herd-improvement testing records are made through centralized data processing for all Clatsop herds on test and provide a basis for several management decisions for total herd improvement. Artificial insemination, using the best bulls available to the All-West farmer-owned breeding service, has been almost totally accepted by dairymen as one of the most economical means of herd improvement. Economies



Nation's Top Producing Guernsey Herd at John Jacob Astor Experiment Station of Oregon State University

in herd-handling labor are also being realized through pipeline milkers, stall housing, mechanical feeding devices, and manure storage and spreading equipment.

According to some economists, dairy-farm production totals equivalent to 500,000 pounds of milk per family

farm is not uncommon. This amount of production would represent a herd of 50 cows producing an average of 10,000 pounds per cow. In order to accomplish forage and herd management necessary to this size of operation, considerable investment in labor-saving devices is also needed.

FORAGE

Home-Grown Forage

The dairy-herd feeding program then becomes the other major avenue to increased production per cow. Forage production and its utilization is particularly important to an economical dairy farm unit in Clatsop. Improved forage lands are capable of 7 to 8 months of use for pasture, silage, and hay. Through maximum use of home-grown forage, Clatsop dairymen should be near a competitive position with other areas of the state. However, costs for labor and the ease with which pasture improvement is often neglected for other chores has brought forage production to a low point on many Clatsop farms.

A major problem for the Clatsop dairy industry is to determine feasibility of a forage production and utilization program and then pursue it. Forage studies at the Astor Experiment Station and statewide dairy cost studies may soon establish or reaffirm the dollar value of home forage sufficient to justify the expenditure in drainage, liming, fertilizing, fencing, and seeding that is necessary on many farms.

Forage Production - Utilization at Astor Station

The agricultural experiment station in Walluski is one of 12 branches of the Oregon State University Experiment Station. The John Jacob Astor Experiment Station staff has been assisting coastal farmers with livestock research since its establishment in 1914. Present forage research substantiates the value of our locally grown clover and grass crops in production of milk or meat.

The 30 Guernsey cows in the station milking herd have provided a good means of measuring the feed value supplied by 18 acres of pasture over a 155-day growing season. Each acre returned total digestible nutrients worth \$121. This tideland pasture is growing meadow foxtail and New Zealand white clover. It is divided into six fields cross-fenced for daily strip grazing. As each three-acre field is grazed off, it is clipped, dragged, fertilized with liquid manure, and irrigated. One grazing cycle of the six fields requires from 5 to 8 weeks, ample time for the fields to make a strong regrowth.

Fertilization includes liming every 5 to 6 years, and treating with phosphate and potash annually, according to clover-grass balance and periodic tests of soil to check fertility levels.

In addition to the direct value of the pasture to the dairy herd, these experiment station acres provide some "clean-up" grazing for 10 to 12 beef cows and their calves immediately after the dairy cows are removed and before the fields are clipped. Also, during the early spring flush of growth, silage is made from 3 to 6 acres of the 18 acres.

Experiment Station Silage

The success of making high-quality silage from local

forages has been demonstrated at the Astor Experiment Station. The station herd has held top production on "home-grown" silage when fed from November through March. Mowing, tedding, wilting, field chopping, and adding 70 pounds per ton of molasses at the silo produced a highly palatable silage of 35 to 40% drymatter. Fed twice daily, this silage is supplemented only by 5 pounds daily of alfalfa hay per cow plus a dairy concentrate fed at 1 pound for every 4 pounds of milk produced per cow above the first 10 pounds.

Recommendations

★ Improvement of Clatsop pasture lands through re-seeding, liming, and fertilizing is needed to strengthen the dairy industry. Many dairymen need additional equipment. This cost could possibly be reduced if major equipment could be leased or rented. The committee reviewed the possibilities for a forage company to produce forage efficiently for many farms.

★ The committee recommended that dairy and livestock farmers consider preparation of ample low-moisture clover and grass silage, cut early, wilted, chopped fine, and stored in convenient upright or bunker silos as a chief means of offsetting high cost of purchased feed. Energy—phosphorus, vitamin D, and minor elements of copper and cobalt—must be supplied in rations of high-producing herds.

★ Dairymen need longer credit terms in line with the actual depreciation of inventory items and would like to see local banks extend their repayment requirements.

Bank Credit Tax Schedule F. H. A. Terms Depreciation Terms

Livestock	5 years	7 years	7 years
Equipment	5 years	10 years	
Buildings and land	15 years	25 years	40 years

★ Dairymen are encouraged to use the DHIA service as a source of production, breeding, and feeding records. Data processing is also available for farm income and expense records at slightly additional cost.

★ Food marketing chains will continue to grow in marketing power, and producer groups need maximum solidarity to match this market power and to develop product-sales programs to offset the growing use of imitation products.

★ Milk shipments to the Portland market area as of January, 1967, will be under an enforcement program to insure high-quality milk. Clatsop dairymen should continue with the best-known practices of udder care and milk handling to assure their continued place in the market pool.

★ Periodic review of methods for dairy-production record keeping and DHIA record analysis was considered helpful and necessary by committeemen.

Horticulture Committee Report

Although horticultural crops have been grown in Clatsop County for many years, several factors have kept the county from becoming a major producer of horticultural crops. Chief among these are (1) weather, (2) geographical location, (3) production costs, and (4) available land.

With an average annual rainfall of 80 inches, limited sunlight during the growing season, and cool temperatures, many crops do not grow well. While proximity to market is not as important as it was a few years ago, being 100 miles away from a sizable market adds to the cost of production. Both lack of available labor and transportation costs for equipment and products used in production and in getting goods to market add to the production cost. Until recently very little land suitable for the production of horticultural crops was available for this purpose, much of it being used to produce forage for dairy and cattle, and other livestock. Land values for farmland have risen sharply in the past 15 years, as the amount of available land has declined along with the number of farms and the amount of land in farms. The following table shows certain facts about land available for horticultural production for the past 15 years, according to 1964 U. S. census:

	1950	1954	1959	1964
Total land area	524,800	524,800	524,800	515,200
Percent in farms	10.8	9.8	10.5	7.7
Total No. of farms	837	697	452	486
Acres in farms	56,616	51,458	55,082	39,501
Average size	67.6	73.8	120.5	81.3
Value of land and buildings				
Avg. per farm	\$10,294	\$17,005	\$23,061	\$31,931
Average per acre	\$ 153	\$ 210	\$ 245	\$ 399

The following table shows agricultural land use in Clatsop County:

Use	Acres	Total Acres
Cropland harvested	7,448	
Cropland cultivated (fallow)	64	
Cropland pastured only	6,557	
Cropland, idle or failure	1,330	
Total cropland		15,399
Woodland pastured	5,871	
Woodland not pastured	6,275	
Total woodland		12,146
Other land pastured	10,631	
Other land not pastured	1,325	
Total other land		11,956
Total land in farms		39,501
The following commercial horticultural crops were reported as grown in Clatsop County in 1967:		
Crop	Acres	
Cranberries	45	
Holly	80	
Peas	10	
Beans	5	
Lettuce	1	
Berries	10	
Miscellaneous	10	
Total		161

In addition to these crops, some nursery crops are grown in the county. Thirty-three individuals and businesses hold state nursery licenses. Twelve of these are producers. Three of these growers have sold a sizable amount of stock. There are several thousand acres of land presently available in Clatsop County for the growing of horticultural crops.

BERRY CROPS

Cranberries

The 45 acres of cranberry bog in Clatsop County are located in the Clatsop Plains area. Cost of land preparation is a major consideration in the production of this crop, with growers reporting a cost of between \$3,500-\$4,000 per acre to prepare land for production. Acreage yields have increased in county bogs from 50 to 60 barrels to as high as 200 barrels in some bogs (one barrel weighs 100 pounds). This is a considerably higher yield than growers in other parts of the United States report. Cranberries are marketed through the National Cranberry Association, with the district plant located at Grayland, Washington. The present marketing cost to growers trucking in berries is 50c per pallet (a pallet is a low platform that holds 10 barrels or 1,000 pounds). Since a load consists of six pallets, the cost per load is \$3. There is also a \$6 bridge toll. Some land in the Clatsop Plains area would be suitable for development into cranberry production.

Washington growers enjoy two slight advantages not available to Oregon growers. Under the ASCS federal cost-sharing program, Washington growers may be paid up to \$50 per acre every five years for sanding their bogs.

Under the same program there is also a weed-control practice which reimburses growers up to \$35 per acre for weed control.

The McFarland has been the standard berry variety, but experimental work is being done with other berries to improve yields and ripening dates. Pests include weeds, insects, diseases and rodents. Sprinklers are necessary in bogs both for irrigation and frost prevention.

There is some medical evidence available to indicate that cranberry juice is beneficial in the prevention of kidney stones. Because of this and an increase in the use of cranberries for a variety of products, there has been a considerable increase in demand.

Problems

- ★ Ways must be found to reduce production costs if Clatsop County growers are to continue production.
- ★ Control of weeds, insects, and plant diseases must be practiced in order to maintain production and quality and to remain competitive.
- ★ The production of better quality berries is a problem. Needed is a berry with the desirable qualities of the McFarland, but also one that colors earlier and yields more.

★ If production in the county is to be expanded, either growers with past successful experience must do it, or those willing to learn the business and having sufficient capital need to be found to develop the bogs.

Recommendations

★ Cranberry growers already in the business or prospective growers with the necessary capital should be encouraged to investigate the possibility of preparing additional Clatsop County land suitable for cranberry production.

★ Growers and prospective growers should continue to work closely with the Extension Service and the cranberry experiment station as well as with their marketing association to obtain the latest information on pest control.

★ The Extension Service and the cranberry experiment station should continue to work on new variety trials and other production problems facing the grower.

★ Growers should seek every available means of cutting production and marketing costs, and also seek to obtain federal cost-sharing benefits under the ASCS program in sanding, weed control, and drainage.

Holly

The holly acreage in Clatsop County has increased in the past 10 years from a few acres to about 80 acres. Of this acreage, 60 acres is in production, with the other 20 acres coming into production in the next few years. Clatsop County holly is a superior product. It has a sheen on the leaves that holly produced in many other areas does not have. Almost all of the holly produced in the county is marketed outside of Oregon. Holly growers at present must locate their own markets, since there is no central marketing agency. Practically all of the sales are to florists, department stores, and supermarkets in the east, midwest, and south. Almost all of the holly is sold as cut holly, although some is made into wreaths, boutonnieres, corsages, door swags, and other decorative items. In 1967 about 70,000 pounds was sold out of the county.

Seventy-five percent of the holly acreage is owned by three growers. Harvesting, storage, and shipping begin in November and runs to within a few days of the holiday season. About 20 persons are employed for this specialized work, five working full time, including the owners or operators.

At present growers feel that they need to get at least 40¢ per pound for cut holly. Because of management practices, trees vary according to size, variety, and height, so that it is impossible to establish an average production per tree. Generally, there are about 100 trees per acre. The most common variety of holly and that found in the old established orchards is the French-English or Gig Harbor type. About 40% of the holly in the county is of this type. The berries on this variety are of good quality but are sometimes late in maturing. This type of holly is also subject to *Phytophthora* disease. Some of the newer varieties are being tried in some of the later plantings. Holly that is shipped must be dipped in naphthalene-acetic acid to prevent the berries and leaves from dropping off.

Several of the growers are members of Oregon Holly Growers Association.

Problems

★ *Insect and disease control.* The cool, moist climate during the winter is favorable not only for the growth of holly but for the fungus, *Phytophthora illicis*. This disease organism causes cankers that encircle the twigs and leaves, causing a dieback of the leaves and twigs. The fungus also emits ethylene gas, which causes the leaves to drop off. For control, this requires a spray of nabam and zinc sulfate applied about October 15. Certain varieties are more susceptible than others. Good air circulation also helps in control of the disease.

Bud moth, leaf miner, scale, and blister are also problems. The leaf miner requires a spray about March 1 to 10. Bud moth requires two or three sprays—the first being applied when the new growth is about one-fourth inch long, the other two as new generations of the pest hatch later in the summer. Scale is usually controlled by one of the aforementioned sprays. At present there is no satisfactory control for blister.

★ *Berry ripening.* *Ilex aquifolium* (English holly) is bisexual, or requires male trees for the pollination of the female, which produces the berries. About one male for every 20 or 25 trees is the general requirement. Some orchards are poorly pollinated because of inadequate bee activity. This indicates that bees have to be introduced into the orchard when it is in about 40% bloom. Holly with few berries or berries that cannot ripen does not meet market requirements. Some growers believe that the problem is partly of a nutritional nature.

★ *Lack of grades and standards.* Since growers generally find their own market and there is no regulation or quality other than general consumer acceptance, there are no established grades or standards. While in the short run this may not be a problem, in the future expansion of the industry it may be serious. Some growers ship holly with long woody stems making up the bulk of the weight. Others are interested in shipping heavily berried holly that consists mostly of leaves. Because of lack of an established price for a given grade, there is considerable price cutting among growers to get a new market.

★ *Lack of information.* Since the holly industry is relatively small and relatively new, there are many cultural and management problems on which growers need more reliable information. Some of these are holly nutrition, holly marketing, and insect and disease control.

Recommendations

★ There is room for more good holly producers in Clatsop County. Those considering holly production must have adequate capital to finance the project. It is a longterm investment, for holly takes from 5 to 8 years to come into production after being set out, depending on the age when planted, the variety, and the management practices followed. Those entering the field should be willing to work with other growers through the growers' organization for the improvement of the industry. They should plant varieties shown to be fast growing, reasonably disease resistant, early maturing, and of recognized quality. Some varieties do well in the Willamette Valley and other parts of Oregon and Washington but have performed poorly in local trials. The County Extension Service should be consulted as to recommended varieties. Growers entering the field should plan to develop their own markets and their own specialties. They should also be ready to devote con-

siderable time and study to management problems. In short, not everyone can make a success of holly growing. The opportunity is there for one who has the ability, capital, and willingness to learn the business.

Growers with established orchards should be certain to follow approved insect and disease-control recommendations. This will help them to produce a quality holly.

Oregon State University researchers in entomology, plant pathology, and horticulture should continue to gather

information on control of bud moth, leaf miner, scale, phytophthora and blister as well as on holly nutrition and cultural problems. Of immediate concern is development of a spray program to control holly blister, which at present threatens the industry.

Growers need to work cooperatively on development of grade standards and marketing. The Oregon Holly Growers' Association and Oregon State University Extension Service should take the lead in this work.

VEGETABLE CROPS

There were about 25 acres of commercial vegetables produced in Clatsop County in 1967. These included peas, beans, cabbage, cauliflower, cucumbers, corn, and some squash, all of which were produced for the fresh market. Peas are planted in February or March. Other crops mentioned are planted in April and May. Vegetables for the fresh market which are used in Oregon and the western United States are grown primarily in California and Arizona. The reason is that buyers in the large chain outlets require large amounts on a year-around basis. These buyers order by phone and can order a specific amount and a specific grade for an established price and be assured that they will have it when they need it. Since production costs are lower in California than in other places, growers in that state can supply the market for the lowest price. At times Oregon growers have tried to improve quality and put a better product on the market for less money. Practically all fruit and vegetable men who buy in large amounts are not willing to pay extra for higher quality as long as they can get a product that meets grade standards. If the consumer is satisfied, price alone is the factor. The reason that California and Arizona growers can produce for less is that large acreages are available and the climate allows them to grow two or three crops a year. However, Oregon buyers will purchase from local growers if these growers can produce enough and will accept the prevailing price. There have been examples of growers in Oregon who have formed marketing associations to good advantage.

Generally the crops purchased in Clatsop County are of good quality. One grower successfully raised lettuce for local restaurant trade. Clatsop County peas are of excellent quality and supply much of the demand of Portland and local consumers on the fresh market. Experimental work on cauliflower and artichokes shows promise that

these crops may be commercially successful in time. Plantings of artichokes have been established with the assistance of several local cooperators.

Despite the high annual rainfall, at certain times of the year drought conditions prevail, often during the growing season. This makes it necessary for the successful grower to irrigate.

Problems

★ *Climate.* Because of the high rainfall and cool summers, certain vegetable crops cannot be produced competitively in Clatsop County. The climate is favorable for the growth of certain fungi that attack vegetable crops and also for slugs and insect predators.

★ *Distance from market.* Proximity to a large city market or to Willamette Valley processors enables growers to produce a crop competitively. Peas, cucumbers, beans, cabbage, cauliflower, and artichokes must be shipped to Portland, Seattle, or larger metropolitan areas if produced in excess of the local market. This cuts into the margin of the growers' profit.

★ *Lack of skilled operators.* Commercial vegetable production requires an operator who has a feel for the business. It is not an eight-hour-a-day operation. Long hours and hard work are involved. Often successful livestock operators or those achieving success in other business operations have not been able to operate a successful commercial vegetable farm.

★ *Competition from other areas.* This is a serious problem to be faced by anyone contemplating commercial vegetable production. Vegetables usually are produced commercially where growing conditions are favorable and production costs can be kept at a minimum.

★ *Development of markets for prospective crops.* This problem can be solved. It will take the cooperation of those entering the field. For example, if artichoke production proves to be successful, artichokes can be produced during the summer, when competition from California is at a minimum. Some growers produce a crop without giving any thought to marketing. When it is ready to be marketed, they suffer loss and discouragement and go out of business.

Recommendations

★ Growers should continue to produce crops of beans, peas, cabbage, cauliflower, lettuce, and cucumbers for local markets and markets already established in Portland.

★ Interested parties, including the Extension Service and the Astor Experiment Station, should continue to experiment with artichokes and cauliflower. Production costs, yields, and market acceptance should be determined. Those interested should contact the Extension Service to discuss possibilities of success. It is recommended that 200 acres



Artichoke Production Presently Under Study in Clatsop

ranging in size from one-half to 20-acre plantings be the goal. Good stock should be planted.

★ *Clatsop County growers should cooperate with the Oregon State University Extension Service in a cooperative marketing program for artichokes between June 1 and October 1. This would be the first step in developing a*

NURSERY STOCK PRODUCTION

Thirty-three individuals and businesses hold state-nursery licenses in Clatsop County. Twelve of this number actually produce, with three doing a commercial business. The bulb industry should not be considered for expansion, the reasons being strictly economic. We can raise quality bulbs in Clatsop County and a number of years ago shipped carloads out of the county, but Europe captured the bulb trade with cheaper labor. Japan also is beginning to produce bulbs, including tulips and gladiolas. However, since foreign labor has begun to be more costly, some of the bulb business has been returned to the United States. Although Easter lilies can be raised in Clatsop County, deer are a problem. The nursery license fee is \$16.50 per one-fourth acre.

Clatsop County has certain advantages that few people realize. Some of these are:

Peat bogs. Analysis of samples indicates a high-quality peat in the Clatsop Plains area. It is expensive to get out, but it can be done.

Human Resources. People in Clatsop County who have been trained to work with their hands might qualify for the nursery business.

Blow sand. We have a good blow sand under the dunes that is weed free and needs no sterilization. This can be used with perlite, which would have to be brought in for planting. Sand must be salt free.

Climate. Nursery stock grows well in this climate. Very few freezes are experienced in the county when stock is in the field and needs protection.

Problems

★ *Wind protection.* Some protection from the wind is necessary to keep plants from drying out. Good drainage is also necessary. Windbreaks might have to be planted.

★ *Water supply.* A good water supply — salt free — is needed. Water from sloughs and creeks, provided it is salt free, is warm enough (55°-57° F). Well water is below 50° and sets back some stock.

★ *Encouraging people to go into the business.* Finding people who are qualified to go into the business is a problem. Price of land is not the main consideration. Suitability of land and location are more important than the cost. The prospective market goes beyond the northwest, even to the east coast and to the south. The cost of shipping a truckload of nursery material from Astoria to the east coast will run between \$1,100 and \$1,500, depending upon how it is shipped. Nursery stock production takes money to get started but could be developed into a profitable enterprise.

★ *zoning.* Zoning, while not classed strictly as a problem, could be a problem to an unwary operator. The entire county could be zoned. Prospective operators should be aware of this.

★ *Supply of container material.* Stock supplies would have to be obtained, and this could present a problem.

★ *Labor supply.* A large vineyard operator in California

market for locally produced artichokes.

★ With an increase in tourist trade, growers should try to establish a market with local and nearby restaurants for lettuce and possibly other fresh vegetable crops that can be grown locally.

is bulldozing out 5,000 acres of grapes and is going into another crop where he can be entirely mechanized. The nursery business requires skilled labor. For example, the balling operation takes skill and must be done by hand at a labor cost of \$2.50 to \$3 per hour.

★ *Deer and elk damage.* Because of the prevalence of these animals, nursery containers would have to be protected.

Recommendations

★ More information should be assembled by the County Extension Service on frost danger; water supply; rainfall; temperature, labor supply; and crops that can be grown.

★ Prospective nurserymen start in a small way. An acre of mature cans of stock ready for market means 35,000 cans. To grow one acre of stock a prospective grower needs three acres: One acre ready to go, one acre coming on, and another acre started.

★ Growers should stick to smaller commodities such as heather and conifers, which are at present worth 55c to 60c per gallon container.

★ In shipping nursery material, freight rates should be checked. If it is shipped in 24-foot boxes, the freight company ties it in with another load and the rate is reduced.

★ The nursery business could be a source of income to retired people. In Clatsop County, particularly in the Seaside-Cannon Beach area, there are many retired people. They might possibly consider raising some nursery stock to supplement their income.

Retired people should be particularly wary of "sharp operators" who offer to contract out with people to raise some of their stock. People pay for the stock in cash and the operator agrees to sell the stock for the grower. Instead of paying the grower for growing it, they take it to sell on consignment. Many times the grower is left with stock or has to sell it at a greatly reduced price. It is important to deal with reputable nurserymen. One woman lost her life savings on such a deal.

★ The nursery business in Clatsop County should be expanded. Prospective nurserymen should get more information at the County Extension Office.

Other Crops

A variety of other berry crops including strawberries, raspberries, and other cane berries and blue berries can be and are grown with some degree of success.

Problems and Recommendations

Problems in berry production are a result mainly of the climate. Certain diseases and insects attack berry crops and are difficult to control. Berry production should be expanded to meet the needs of local markets. More information is needed. Recommended control of insects and diseases should be followed.